DEATH BY DECEPTION

ADVANCED IMPROVISED BOOBY TRAPS

JO JO GONZALES

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In this sequel to his best-selling book, *Deathtrap!*, Jo Jo Gonzales reveals more improvised booby-trap designs. Discover how these death-dealing devices can be constructed from such outwardly innocuous objects as computer modems, hand-held radios, toilet-paper dispensers, shower heads, talking teddy bears, and traffic cones. Detailed instructions, schematic diagrams, and typical deployment techniques for dozens of such contraptions are provided. In addition, in an effort to fill the need for public education on this topic, the book ends with the basic framework for counter-terrorism seminars and awareness courses focusing on terrorist IEDs.

This is an invaluable resource for contract military personnel, EOD specialists, law enforcement personnel, and Special Forces team members. It will also prove of use to the potential civilian target who understands that a familiarity with the plethora of possible guises under which today's "infernal machines" may be found will give him a distinct advantage. *For information purposes only.*

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by Jo Jo Gonzales

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WARNING

The manufacture, possession, and use of explosives and explosive devices is *illegal* without certification and registration with the proper authorities. It is the reader's responsibility to research and comply with all local, state, and federal laws regarding the manufacture, possession, and use of explosives and explosive devices.

The procedures in this manual and the resulting end product are *extremely dangerous*. Whenever dealing with high explosives and electronics, special precautions should be followed in accordance with industry standards for experimentation and production of high explosives and electronics. Failure to strictly follow such industry standards may result in harm to life or limb.

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INTRODUCTION

Here are a variety of improvised booby-trap, mine, and bomb designs, all of which can be made from readily available components. Typical deployment techniques are covered, as are certain security-defeat measures.

The manufacture of explosive material proper is not included, as it is assumed that persons utilizing the designs presented herein in an offensive or defensive scenario will, by virtue of their legitimate, professional status, have access to the various commercial varieties or be familiar with field-expedient manufacturing techniques. Again, in the context of legally authorized use only, it is further assumed that such persons will have a sound knowledge of and familiarity with electronic circuitry, although, in all cases, the circuits discussed are shown in their simplest form. The illustrations are self-explanatory; thus, descriptive text has been kept to a minimum.

The book will prove of use (for offensive or defensive purposes) to contract military and counterrevolutionary warfare (CRW) personnel, as well as Special Forces team members. It will also be a valuable resource for the potential civilian target who understands that a familiarity with the numerous possible guises under which today's "infernal machines" may be found gives him a distinct advantage. The informa-

tion here will also be of value to persons conducting improvised explosive device (IED) literacy/counterterrorism seminars, and with this purpose in mind the basic framework of such a seminar/awareness course is included (see Appendix I).

The designs shown may be modified and adapted to suit a specific situation. Further, several such designs may be combined in part or in whole to create a hybrid system.

Always test for correct circuit operation before installing detonators proper. A simple flashlight or vehicle bulb tester can be used for these checks. If all is as it should be, remove the power source and check that no current remains stored in the circuit (in capacitors, for example). Some type of delayed-arming feature should be incorporated into the device whenever practicable.

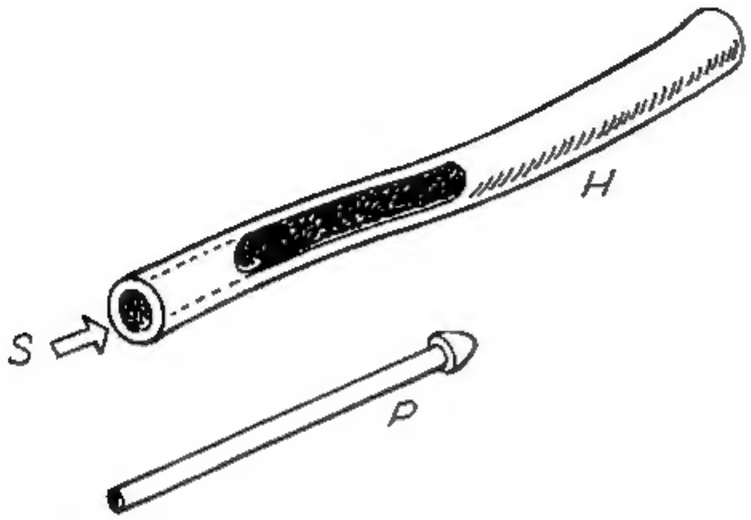
Although not always shown in the illustrations (for the sake of clarity), it can be assumed that a charge of explosive material and, where applicable, shrapnel-making material surrounds the detonator. As the precise specification of components will vary from source to source, always select on the basis of tests using nonexplosive components. Illustrations are not to scale and show the required interconnections rather than specific placement positions. All interconnecting wires shown in the diagrams are of the insulated type. Also, references to a "battery" can be assumed to mean a single commercial battery or an improvised battery pack consisting of sufficient series-connected cells to achieve the required firing current.

BABY VIPER

This is a flexible explosive "snake" manufactured from a section of hose filled with explosive. It is suitable for command-detonated or time-delay operations against targets traveling over narrow, otherwise inaccessible drains and culverts, or for insertion into pipework and so forth. Substitution techniques might also be considered in which an existing hose, probably on its reel/holder, would be replaced with a modified assembly incorporating a movement-sensitive switch.

Rubber hose is far easier to manipulate than the plastic type and is preferable for most applications. In either case the technique is simply to fill as much of the inner cavity of the hose with explosive material as is required to accomplish the task at hand. This can be achieved using any improvised pushing tool of the correct diameter and length, according to the size of the hose. Drain cleaning rods or chimney brush rods are ideal, as they are designed for continuous length extension.

The pushing head of the tool should be shaped as shown on the next page for ease of operation. During final deployment the detonator is placed centrally in the open end of the hose pipe.



H = HOSE
P = PUSHING TOOL
S = SEMTEX, DEMTEX, OR SIMILAR EXPLOSIVE

BANK NOTE BOOBY TRAP

A bank note is an excellent lure with which to trap the unwary or, indeed, the wary, for few people will resist the temptation to liberate some abandoned cash. The higher the denomination the better.

This particular device relies for its effect on the breaking of a painted circuit track, which causes a relay to close or a transistor to trigger.

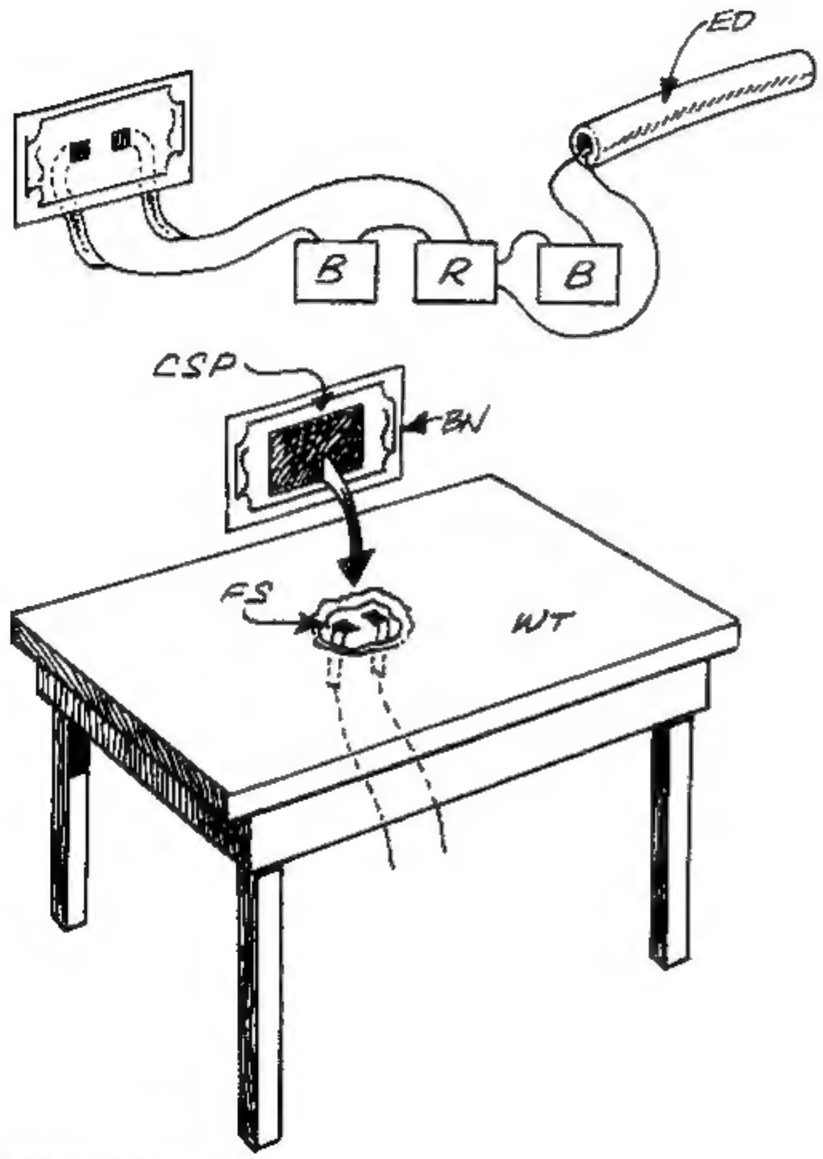
Drill or chisel a hole of approximately the correct dimensions through the tabletop (working from the top down). There is no need for accuracy, as the note will conceal the damage.

Feed two lengths of foil strip up through the tabletop and affix them as shown. Now apply a patch of conductive silver paint to the underside of the bank note and quickly press the note itself down onto the contacts in such a way that they are both shorted out. Hold the note in position until the paint dries, at which point the foil strips should be checked for continuity.

Next, install the relay/battery/detonator/explosive assembly as illustrated, using small alligator clips to facilitate the connections. Remember to check for an absence of current before installing the detonator.

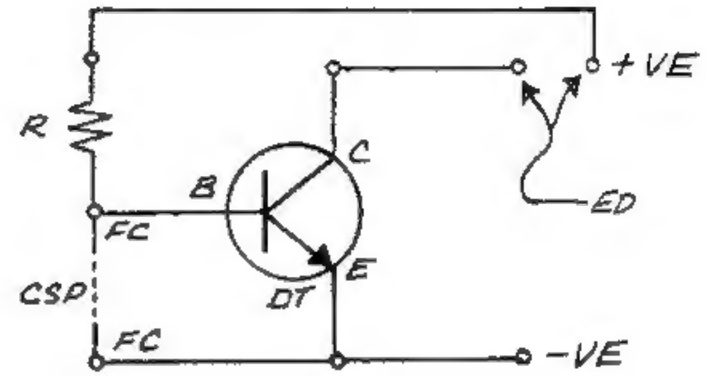
The open relay contacts prevent power from the firing battery from reaching the detonator. When the note

is pulled from the table, the circuit is broken, the open relay contacts close, and current flows to the detonator.



BN = BANK NOTE
CSP = CONDUCTIVE SILVER PAINT
WT = WOODEN TABLE
ED = ELECTRIC DETONATOR
B = BATTERY
R = RELAY
FS = FOIL STRIPS

A variation using a Darlington transistor in place of the relay is shown below. Here, the conductive silver paint/foil part of the circuit "pulls" the base of the transistor down to zero volts. When this part of the circuit is broken, the resistor "pulls" the voltage up to positive and the detonator fires.



R = RESISTOR (4k7 or select on test using a bulb in place of the detonator)
DT = DARLINGTON TRANSISTOR
CSP = CONDUCTIVE SILVER PAINT
FC = FOIL CONTACTS
ED = ELECTRIC DETONATOR

BATTERY CHARGER BOOBY TRAP

You can turn the military type of hand-operated battery charger—usually issued with man-pack/man-portable radio installations—into an effective stand-alone booby trap simply by disassembling the device as for maintenance or repair and installing an electric detonator and explosives package.

Although you will find current-limiting/regulating circuitry within the charger body (intended to prevent overcharging by the user and damage to the charger itself, and also to facilitate comfortable operation inasmuch as rapid turning of the handle will not be required), the output of the vast majority of such units will be sufficient to fire an electric detonator proper or improvised bulb detonator.

The explosive may be pressed into any available internal cavities and the detonator connecting wires attached to the inside terminals of the existing output socket. Prior to this final connection, however, connect a bulb (of similar current/voltage requirements to the detonator) to the terminals to ensure there are no final-stage capacitors still retaining current. If the bulb doesn't light, no current is present.

It is, of course, vital to avoid turning the handle accidentally once the explosive components are installed. It

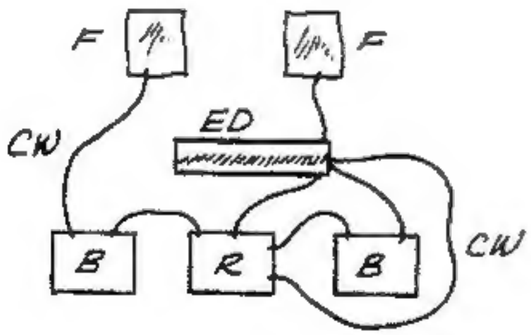
may be prudent to secure handles during assembly and deployment using duct tape or such, as there may sometimes be a natural tendency for them to turn under their own weight, depending on design.

Deploy in the target area in conjunction with related radio items.

Alternatively, the charger can be rigged so that some apparently harmless action on the part of the target causes the spindle to rotate, thereby firing a remotely located explosives package. In this instance disassembly generally will not be required, and if it is, a simple arming switch can be connected in series with one of the firing wires. This type of charger can also be used to command-detonate antipersonnel mines.

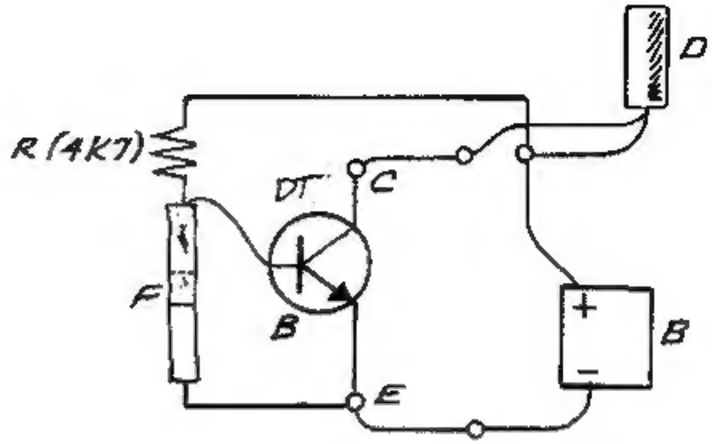
BOOK BOOBY TRAP

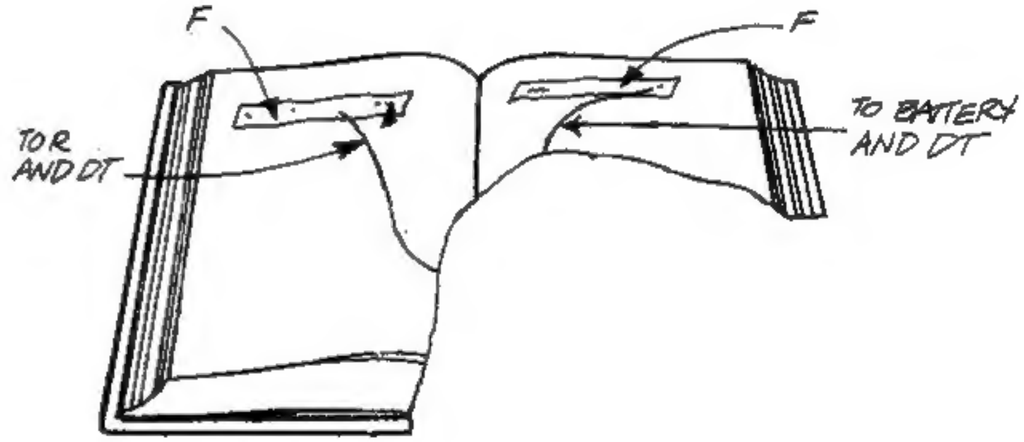
This device operates on a "normally closed" principle, and unlike other devices that are triggered when the two foil contacts are allowed to touch, this unit fires when they are separated. The foil contacts are positioned symmetrically as shown so that they touch when the book is closed. The book pages are hollowed out to accommodate the batteries and other components.



B = BATTERY
ED = DETONATOR
F = FOIL CONTACTS
CW = INSULATED CONNECTING WIRE
R = RELAY

TRANSISTOR-BASED VERSION





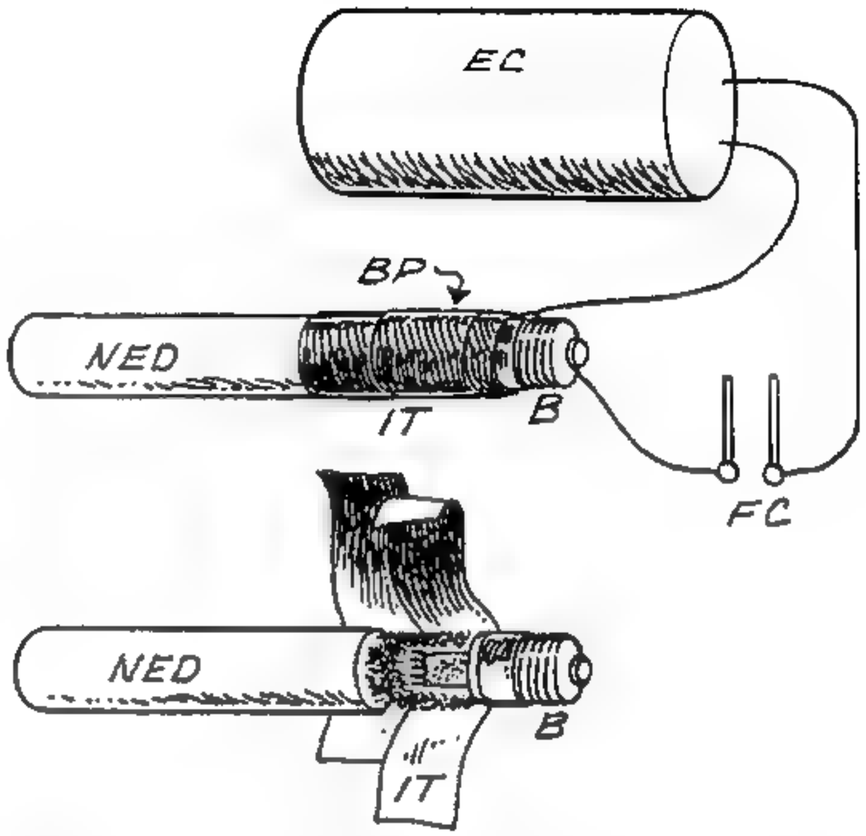
DT = DARLINGTON TRANSISTOR
F = FOIL
CW = INSULATED CONNECTING WIRE
D = DETONATOR (inside explosive)
B = BATTERY
R = RESISTOR

CAPACITOR/BULB DEVICE

The illustration on the facing page shows the principle components of a booby-trap device constructed around a capacitor and a cutaway flashlight or vehicle bulb.

The power storage capability of the capacitor shown (or any other electrolytic capacitor for that matter) will, other things being equal, vary from unit to unit depending on its inherent "leakiness." This refers to the tendency of the charge to leak away naturally even when the capacitor is not connected to anything. A conservative estimate of useful storage life of the capacitor used here is three hours. This design illustrates the technique of using capacitors instead of (or in addition to) batteries proper.

It may prove of use in defeating security checks for batteries or other obvious power sources that might be used in a bomb or booby-trap role. Depending on the size (value) of the capacitor(s), it will be possible to store firing power for anything from several hours to several days.



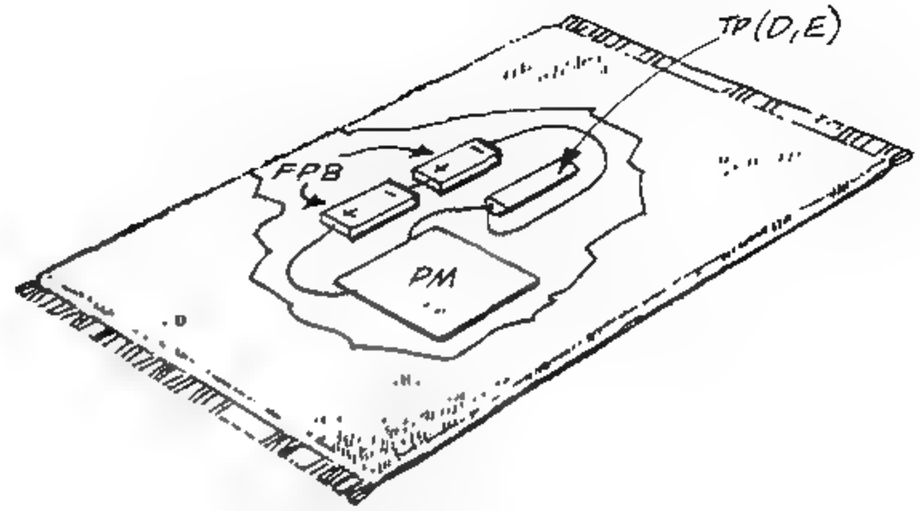
IT = INSULATING TAPE (securing bulb and detonator)
FC = FIRING CONTACTS
NED = NONELECTRIC DETONATOR
EC = ELECTROLYTIC CAPACITOR (10,000-15,000 microfarad range, 12 V working, previously charged by connection to a 12 VDC power supply or battery. Be careful not to short out the capacitor legs.)
BP = BLACK POWDER (surrounding filament and in end of nonelectric detonator)
B = BULB (6 VDC-type, bulb glass cut away without damaging filament)

CARPET BOOBY TRAP

Use thick-pile, thick-backing carpet, which can be found as either expensive Oriental types or cheap "scatter mats."

The governing parameters are simply that the components below can be installed without producing telltale lumps or bumps and that the underside of the carpet/mat can be reattached without the modifications being apparent.

Use a sharp hobby knife to separate the carpet backing and insert the pressure mat. It will often be necessary to "work" the pressure mat using some type of slim, blunt tool. The mats are quite resilient, but take care not to puncture the mat and possibly short out the internal contacts. Insert the trap package last and, having first checked that a short has not been caused, connect the batteries. Carefully refix the backing in place with contact adhesive.



FPB = FLAT PACK BATTERIES
TP = TRAP PACKAGE (slim box containing D, E)
D = DETONATOR
E = EXPLOSIVE
PM = PRESSURE MAT

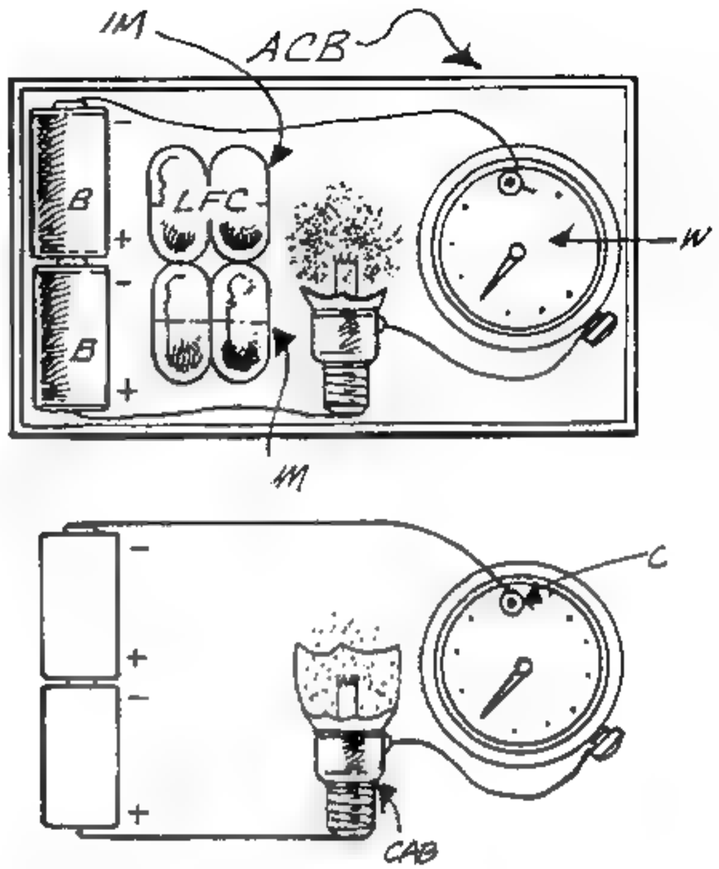
CASSETTE CASE INCENDIARY

Drill a hole into the watch face through which the drawing pin contact is inserted. Remove one of the watch hands (the hour hand for delays of up to one hour, the minute hand for delays of up to twelve hours) and sand the edge of the remaining hand to provide a good electrical contact with the pin. Attach one link wire to the pin contact and the other to the body of the watch (typically the winder).

Check for proper circuit operation before final assembly. When the hand contacts the pin, current should flow from the batteries via the watch to the bulb.

Again before final assembly, position the watch in the case and attempt to close the lid. If it will not close properly, apply flameless heat (from a hair dryer, for example) to the case area immediately above the watch face while pressing the case closed. The case will melt slightly and allow a dome to form, which will accommodate the watch and permit full case closure.

Now, carefully file away the bulb without damaging the filament and pour in black powder. Likewise, pour black powder onto the incendiary material. Insert the lighter fuel capsules and fire lighter scrapings or other incendiary material, confirm the correct setting of the watch timer, and, finally, connect the batteries. The device can now be deployed.



ACB = AUDIO CASSETTE BOX
W = WATCH
C = CONTACT (drawing pin or such)
B = BATTERIES
CAB = CUTAWAY BULB (filled with black or smokeless powder)
LFC = LIGHTER FUEL CAPSULES
IM = INCENDIARY MATERIAL (surrounding LFC)

Note: All interconnections are made with insulated wire.

CAT'S EYE ANTIVEHICLE MINE

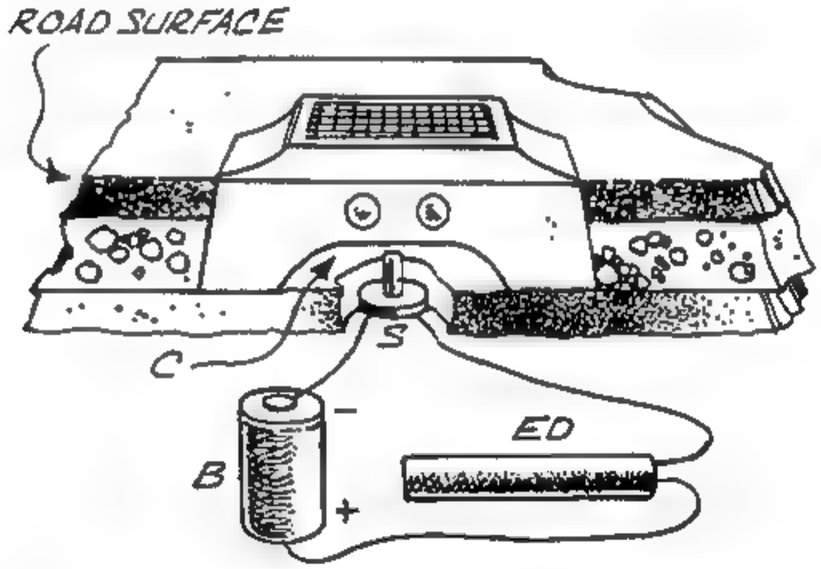
The cat's eyes referred to here are the road centerline marking devices common to most roads in developed areas. They comprise rubber, frame-mounted reflective lenses fitted into a small well in the road; thus, they may be driven over without damage. Indeed, they usually incorporate a self-cleaning mechanism whereby such compression causes the lenses to be wiped across a nylon brush.

Removal is required, so the technique is most applicable to little-used roads or, at least, areas of roads that can be accessed at certain times of the day or night with little if any risk of detection. Further, it is only practicable in the majority of instances for use in areas where the road is paved with tarmac rather than concrete, although this depends on whether or not it is possible to lever out the central rubber lens holder independently of the rest of the unit.

Removal with a view to installing a large explosive charge is achieved by inserting pry bars or a pick between the cat's-eye metal framework and the surrounding road surface. Once pried loose, the eye can be extracted with surprising ease and relatively little damage. The cavity may now be enlarged by undermining the ground surrounding the original cavity so that,

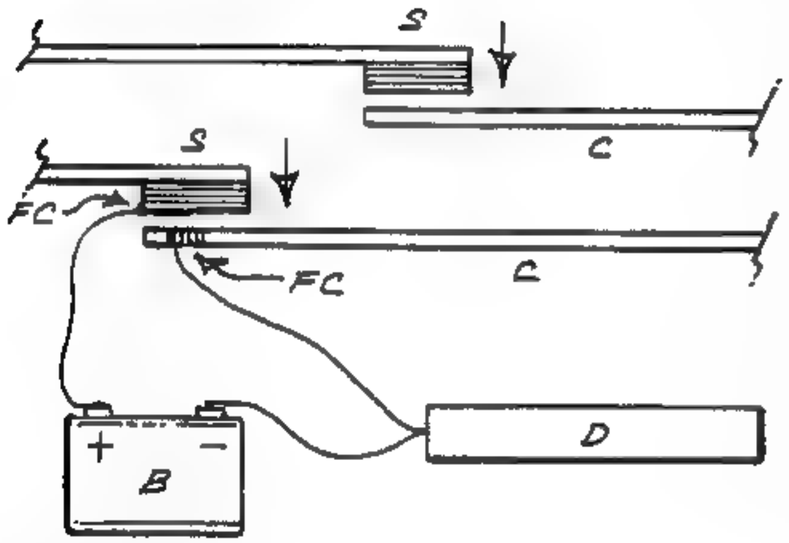
upon replacement, any signs of disturbance are kept to a minimum. A prepared explosive charge and firing circuit assembly of the type illustrated below may now be inserted, the cat's eye replaced, and signs of tampering carefully removed or camouflaged.

It is worth noting that a typical antiambush driving technique employed in "hot" areas involves maintaining (other traffic permitting) a central road position. Also, although any good driver worth his salt will avoid driving over items (old boxes, newspaper, and so forth) that might be concealing a mine trigger, few will avoid the ubiquitous cat's eye.



B = BATTERY
ED = ELECTRIC DETONATOR
S = SWITCH (push-to-make type)
C = CAVITY (switch located here)

CHIMING CLOCK BOMB



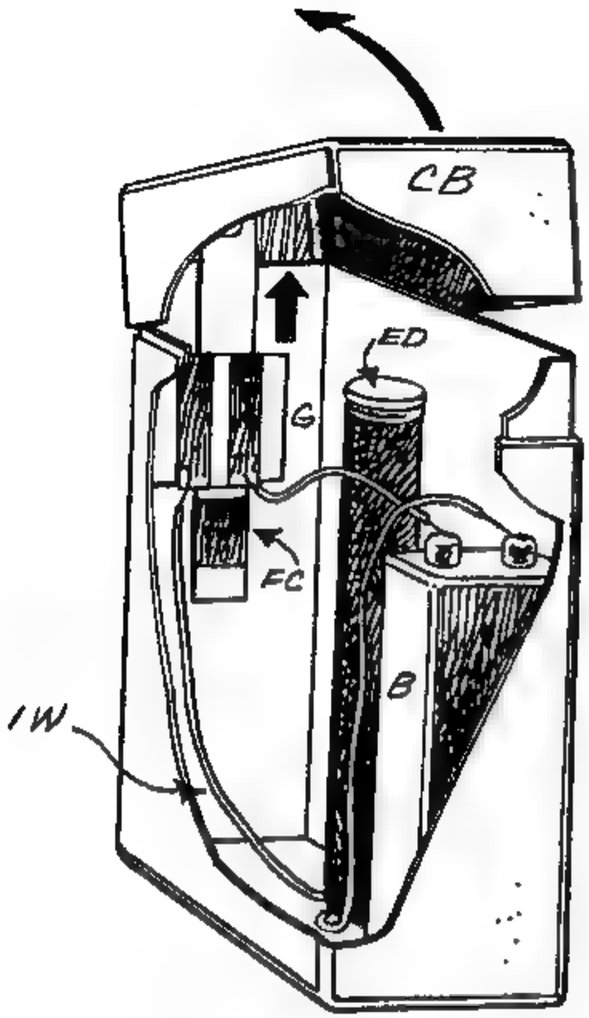
B = BATTERY
D = DETONATOR
C = CHIMES
S = STRIKERS
FC = FOIL CONTACT

The device explodes when the selected striker touches the contact attached to the appropriate chime. A small package comprising the detonator/explosive/power supply and alligator clip contacts can be manufactured off-site and installed at an opportune moment.

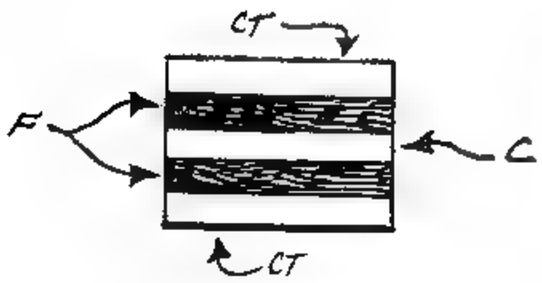
CIGARETTE BOX BOOBY TRAP

On the following page the "100" length cigarette box is used. Stage one is to carefully cut open the bottom of the cellophane wrapper and pull it gently from the box. It will be replaced later, so be careful not to damage it excessively.

Open the box itself and remove the cigarettes and foil. Install the preassembled card firing strip and contact assembly as shown below. Secure the firing strip to the inside of the box lid (as shown) immediately before closing. Taking care that the lid is not opened sufficiently to cause the internal contacts to touch, replace the cellophane wrapper and seal it with a tiny drop of clear adhesive.



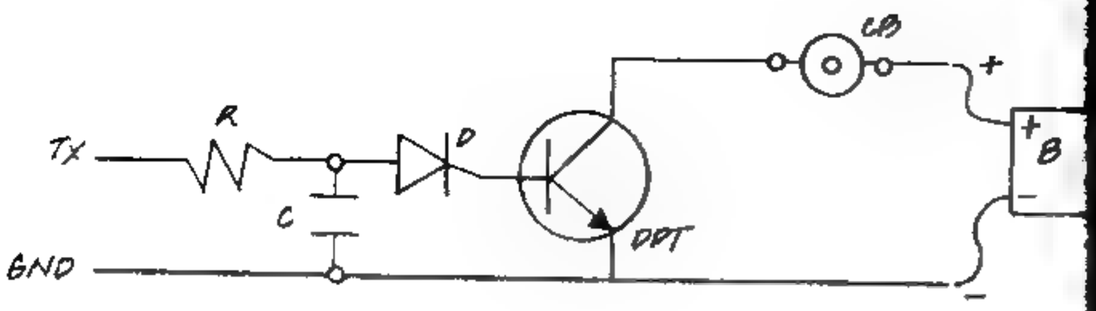
C = CARD
FC = FOIL CONTACT
B = BATTERY(IES)
CB = CIGARETTE BOX
IW = INSULATED WIRE (light weight, hookup type)
ED = ELECTRIC DETONATOR
G = GUIDE (see close-up below)
F = FOIL (or conductive silver paint)
CT = CLEAR PACKAGING TAPE (securing guide to box)
FS = FIRING STRIP (made from length of stiff cardboard)



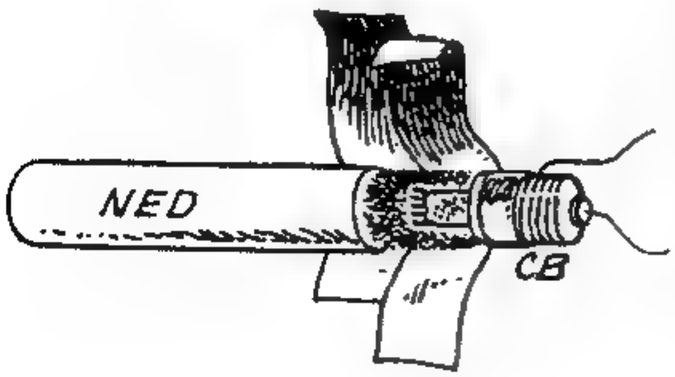
CLOSE-UP OF GUIDE (FS)

COMPUTER COM PORT DEVICE

The device would be applicable for an attack against a computer-using target who is known to be the sole user of that computer for data communication purposes. In an office-based scenario, for example, the type of computer modem used would be determined and a similar model obtained. The modifications shown on following page would then be made and the replacement modem substituted for the original at some opportune time.

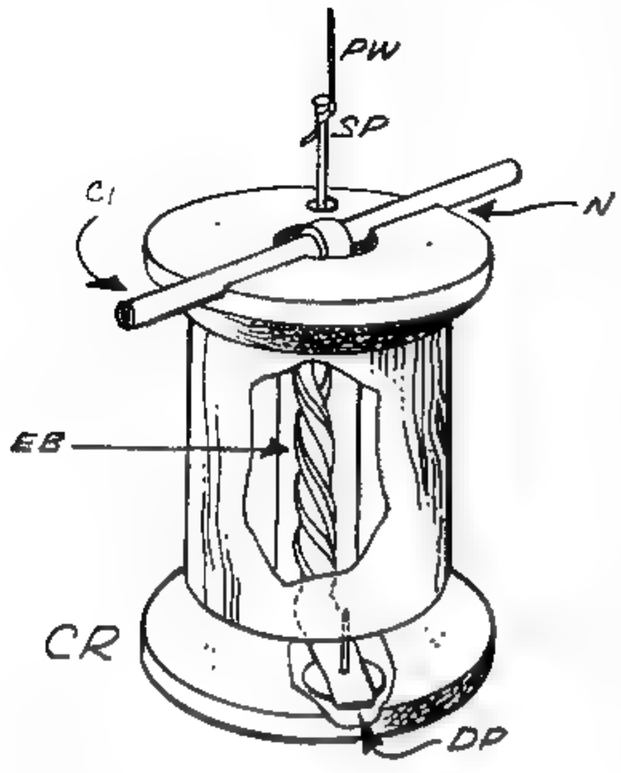


DPT = DARLINGTON POWER TRANSISTOR
C = CAPACITOR (ceramic type, .1 nanofarad value)
D = DIODE (1N4148 or similar)
B = BATTERY
TX = TX LINE (on rear of RS232 socket)
GND = GROUND LINE (on rear of RS232 socket)
R = RESISTOR (1k or select on test prior to the installation of explosive components)
CB = CUTAWAY BULB (filament unbroken and containing black powder)
NED = NONELECTRIC DETONATOR (end containing black powder and secured to bulb with tape)

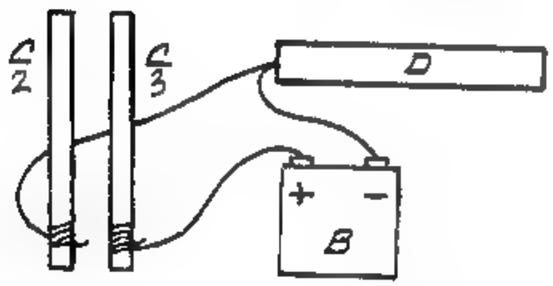


COTTON-REEL TRIGGER

Prior to deployment, contact 1 is lifted out of the notch so as to be retained by the safety pin. Subsequent removal of the safety pin will allow contact 1 to rotate and complete the firing circuit via contacts 2 and 3. This can be used as a trigger or as an arming device. See following page.



C = CONTACTS
CR = COTTON REEL
SP = SAFETY PIN
PW = PULLWIRE
DP = DRAWING PIN (securing elastic band to rim of reel)
B = BATTERY
D = DETONATOR
N = NOTCH CUT INTO REEL (acting as positive safety device during subsequent assembly)
EB = ELASTIC BAND



CULVERT BOMB

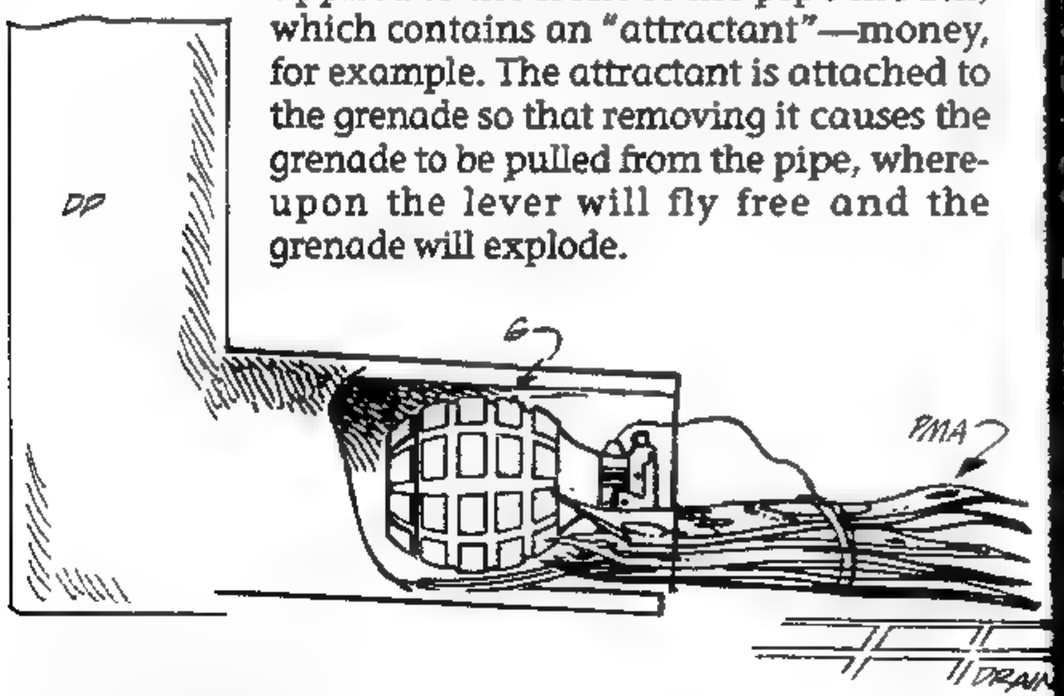
The culvert (a culvert is an underground channel of various diameters designed to allow water from a hillside, for example, to pass beneath the road surface rather than flood onto it) bomb will usually be command-detonated when the target vehicle passes over it (more precisely, just before the target vehicle is over it to allow for the movement of the vehicle in relation to the reaction time of the firer). Security-conscious troops usually realize the dangers of passing over culverts and take precautions to prevent the installation of a bomb or mine. Such measures can be negated, however, if extremely small culverts are utilized. Being of such a small size, these will often be dismissed as being impracticable from the point of view of the terrorist bomb planter.

In such instances the "Baby Viper" (described on pages 3-4), explosive-filled plastic conduit, and the like might all be employed.

DRAINPIPE STASH BOOBY TRAP

This booby trap comprises a pinless grenade inserted into the outlet area of a drainpipe in such a manner that the walls of the pipe hold the safety lever in place.

Camouflage/packing material is applied to the front of the pipe mouth, which contains an "attractant"—money, for example. The attractant is attached to the grenade so that removing it causes the grenade to be pulled from the pipe, whereupon the lever will fly free and the grenade will explode.

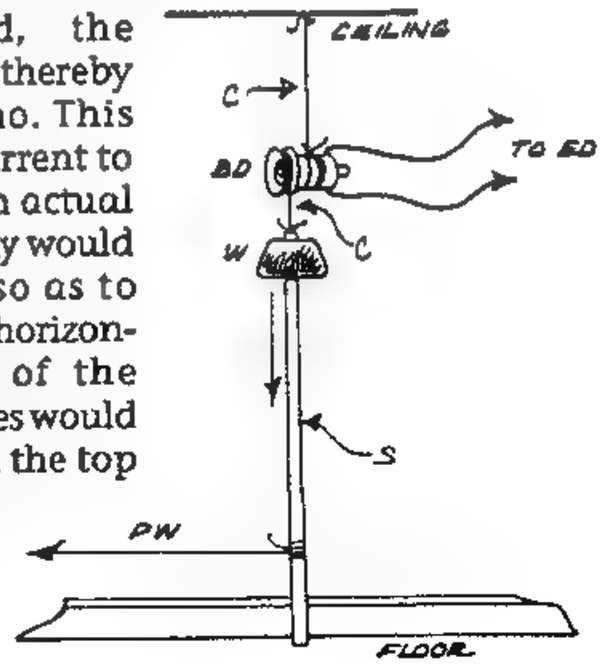


G = GRENADE
PMA = PACKING MATERIAL AND ATTRACTANT
DP = DRAINPIPE

DYNAMO/ FALLING WEIGHT DEVICE

W = WEIGHT
C = CORD
S = SUPPORT PIECE
ED = ELECTRIC DETONATOR
PW = PULLWIRE
BD = BICYCLE DYNAMO (or vehicle dynamo as shown in illustration; *not* vehicle alternator)

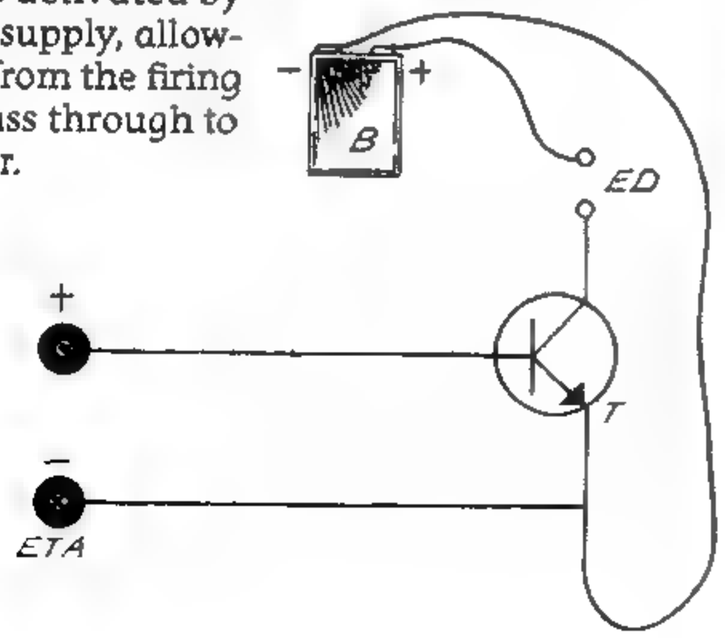
When released, the weight falls rapidly, thereby turning the dynamo. This produces enough current to fire the detonator. In actual use, the dynamo body would touch the ceiling so as to remain more or less horizontal upon release of the weight. Packing pieces would be inserted between the top of the dynamo and the ceiling to keep the pully wheel clear.



ELECTRONIC TRAVEL ALARM BOOBY TRAP

Travel alarm clocks are available from many outlets and are frequently printed with a company logo and distributed as advertising items. They operate from a tiny watch-type battery and incorporate a twenty-four-hour timer.

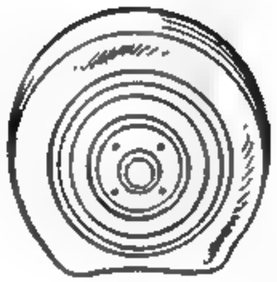
To use them as time-delay devices in a bomb configuration, it is necessary only to remove the existing alarm bleeper and connect it to a transistor and firing power supply as shown. When the preset time is reached, the transistor is activated by the sounder supply, allowing current from the firing supply to pass through to the detonator.



ETA = ELECTRONIC TRAVEL ALARM SOUNDER CONTACTS
T = TRANSISTOR (NPN high-gain, medium-current type)
ED = ELECTRIC DETONATOR
B = BATTERY (firing supply)

FLAT TIRE BOOBY TRAP

This technique is especially applicable in locations where it is desirable to booby-trap certain vehicles, but where it is anticipated that target personnel will be exercising extreme care and detailed booby-trap search procedures (e.g., military vehicles that are to be abandoned to an approaching opposing force).



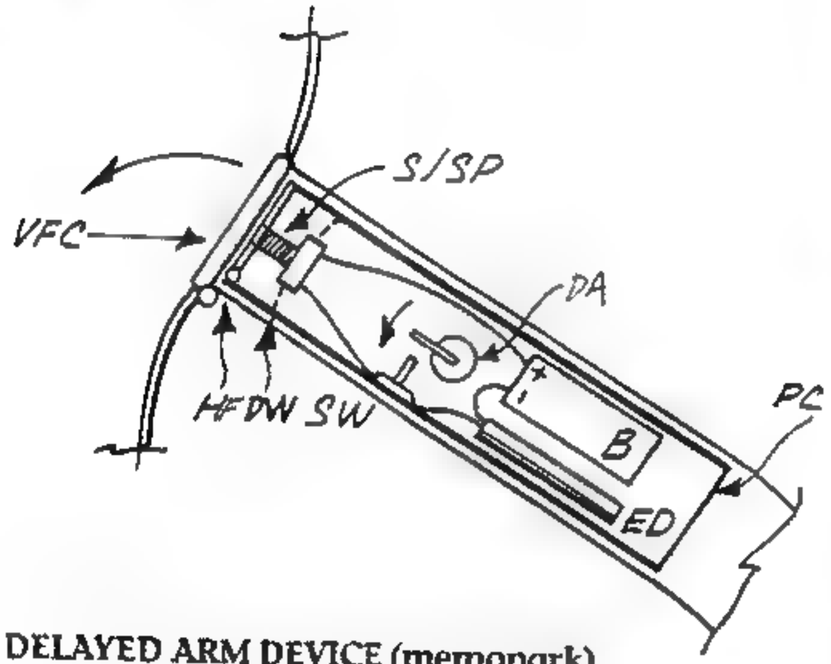
The particular design of this system negates the risk of detection or premature detonation caused by all normal field search and test techniques.

ED = ELECTRIC DETONATOR
B = BATTERY
PSD = PRESSURE-SENSITIVE DEVICE (barometric switch available from industrial/electronic supply outlets)

Deployment would normally see the modified tire fitted to the abandoned vehicle, in conjunction with a nearby tire pump, jack, and obviously damaged spare

tire. The idea is to create the impression that the damaged tire was removed and the replacement (apparently needing air) refitted, but that before it could be inflated the area was abandoned. The device fires when air is pumped into the tire.

FUEL TANK BOOBY TRAP



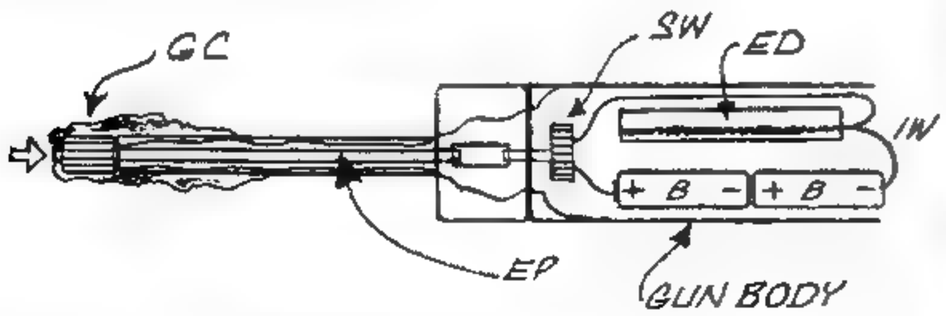
DA = DELAYED ARM DEVICE (memopark)
S = SWITCH (release-to-make plunger type)
B = BATTERY
ED = ELECTRIC DETONATOR
SP = SPRING
PC = PLASTIC CYLINDER
DW = DIVIDING WALL (for switch mounting)
HF = HINGED FLAP
SW = SWITCH (toggle type)
VFC = VEHICLE FUEL-TANK COVER

The plastic cylinder is long enough to allow its emplacement inside the filler pipe in such a manner that the gas cap proper or any external gas cap cover holds the hinged flap firmly shut. If specific required dimensions are unknown (general or, indeed, specific filler tube dimensions can be ascertained by tests on a purchased or rented vehicle of a similar make or by reference to a repair manual), err on the side of the cylinder being too short, as it is simple to insert small wooden packing pieces during installation.

When the delay-arm timer runs down, the circuit will trigger via the switch, which is released when the gas cap is removed.

GREASE-GUN BOOBY TRAP

Here a vehicle grease gun of the "pump body" type is modified in such a manner that applying the nozzle to a grease nipple as per normal use causes the internal switch to be depressed, thereby completing an electrical circuit and firing the detonator. The device can be deployed among the tools in a military vehicle tool kit or among tools stored for use at some particular depot. Few modern civilian vehicles have a facility for regreasing bearings and so on (some off-road vehicles and trucks being the exception).



ED = ELECTRIC DETONATOR
B = BATTERY
SW = SWITCH
IW = INSULATED WIRE
GC = GREASE CAMOUFLAGE (liberally applied)
EP = EXTENSION PIECE

HAND-HELD RADIO BOOBY TRAP

A hand-held radio sporting a flexible, rubber-covered antenna can be readily converted to a booby trap. The design of this type of radio means that when activated, it will likely be in close proximity to the target's head. Thus, the small amount of explosive employed will still prove effective.

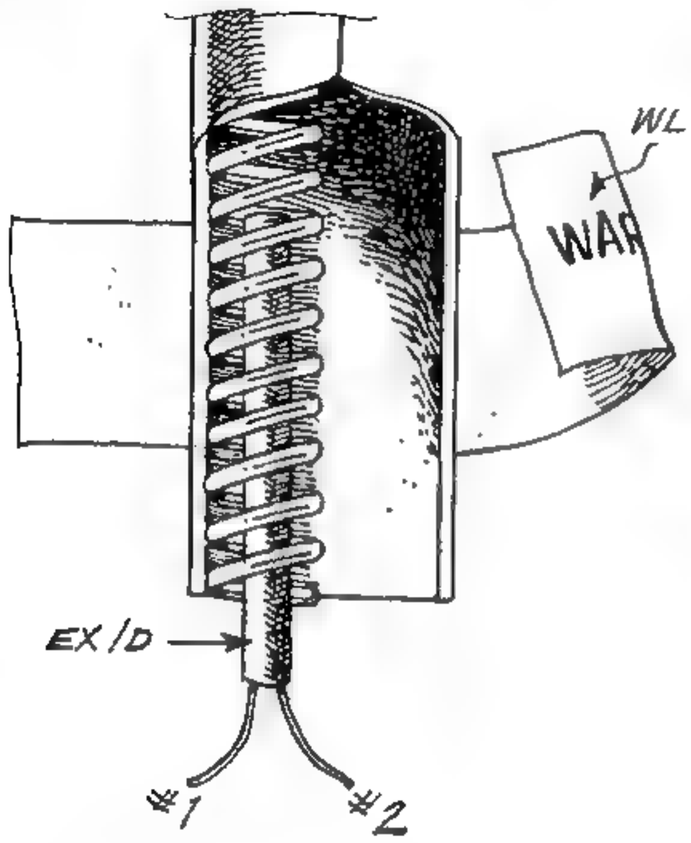
Remove the rubber covering by prying off the antenna end cap, unscrewing the plug components, and, with the "spring" antenna proper held firmly at its base with pliers, turning and pulling the rubber covering until it is released.

Now press the explosive into the spring and insert the detonator. Remove displaced explosive to allow for refitting of the rubber covering.

Affix a warning label to the completed antenna. This will be removed before deployment!

The same technique can be used against vehicle-mounted radio installations. In this case, substitute antenna base units or antenna element sections, modified as per the principle described above, could be employed. Likewise, any large "dummy loads" (nonresonating resistive units used for tuning/testing purposes) can be disassembled easily and modified.

MODIFIED "RUBBER DUCK" ANTENNA
(Rubber covering peeled back to show "spring" design)

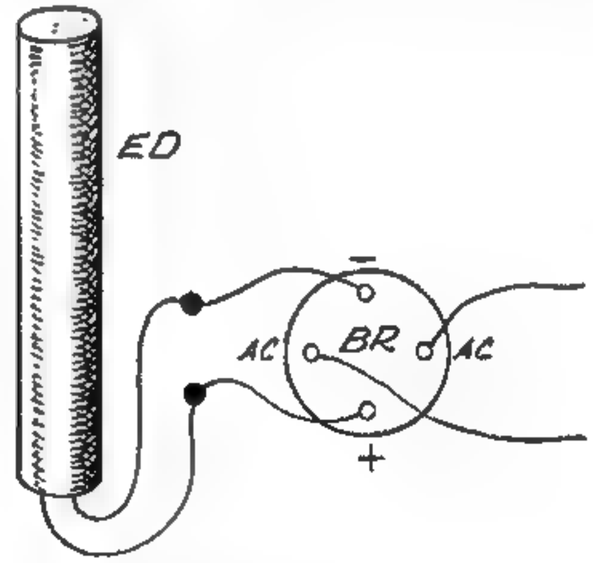


D = DETONATOR
EX = EXPLOSIVE
WL = WARNING LABEL SECURED WITH TAPE (remove immediately prior to deployment)

Remember that electric detonators should not be used in close proximity to active radio frequency (RF) sources, as the induced currents can cause them to fire.

HI-FI SPEAKER BOOBY TRAP

Here the current produced by the hi-fi amplifier is used to fire a charge concealed within a speaker cabinet. As the current from the amplifier is of the alernating type, a diode bridge is installed in series with the speaker wires to rectify it to direct current.



AC = ALTERNATING CURRENT
ED = ELECTRIC DETONATOR
BR = BRIDGE RECTIFIER (W005 type shown)

INFINITY BOMB

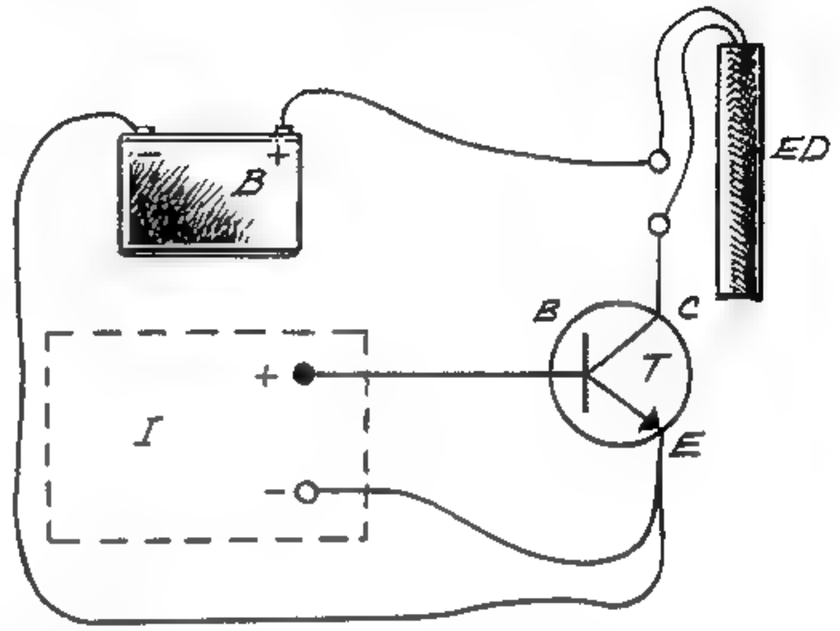
This device takes its name from the infinity transmitter type of telephone surveillance bug, in which a tone or tones are used to trigger the device remotely via another phone. This other phone may be any distance away from the target instrument, hence the term "infinity." In this instance, however, the tone will trigger the explosive device rather than a bug.

The majority of these devices are phone-line powered and operate by opening up the existing phone microphone when the tone or tones are received. Access to the target phone is required, but if this is limited, a replacement phone of the same type can be modified and substituted at an opportune time.

As the phone line current is unlikely to be sufficient to fire an electric detonator directly, a dedicated firing supply may be installed in the form of a battery or batteries and a transistor used by way of a switch to pass the power to the detonator. Connection to the infinity transmitter may be to any two points through which current flows only when the device is activated.

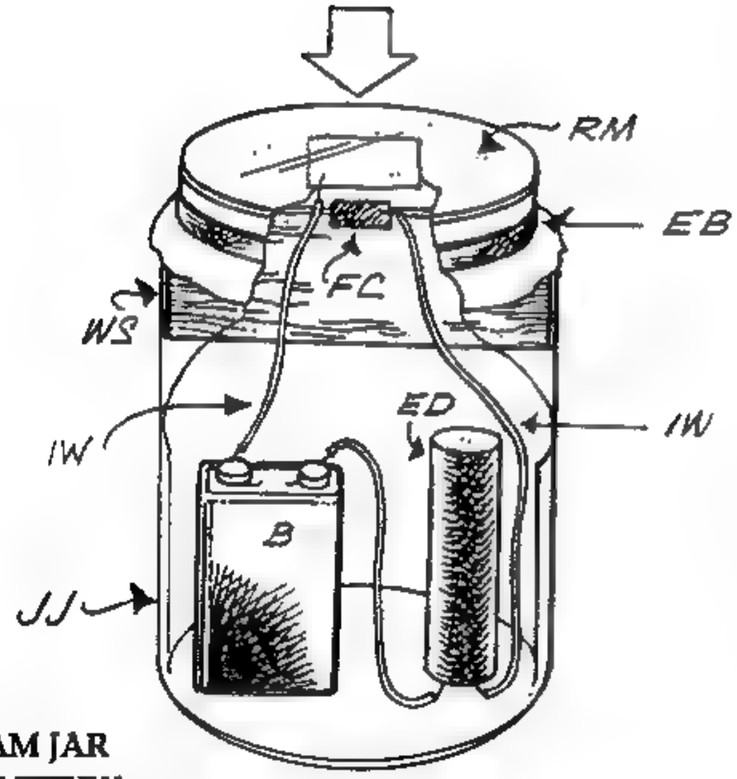
Construction of a nonselective phone booby trap can be accomplished by means of a miniature normally open (NO) relay attached to any available spare hook-switch contacts. When the phone handset is down, no current

passes; when the phone is lifted, as for answering a call, the relay is energized, thereby allowing current from a battery or charged capacitor to pass to the detonator.



ED = ELECTRIC DETONATOR
B = BATTERY
I = INFINITY TRANSMITTER
T = TRANSISTOR (2N2222 or similar NPN type)

JAM JAR AP MINE



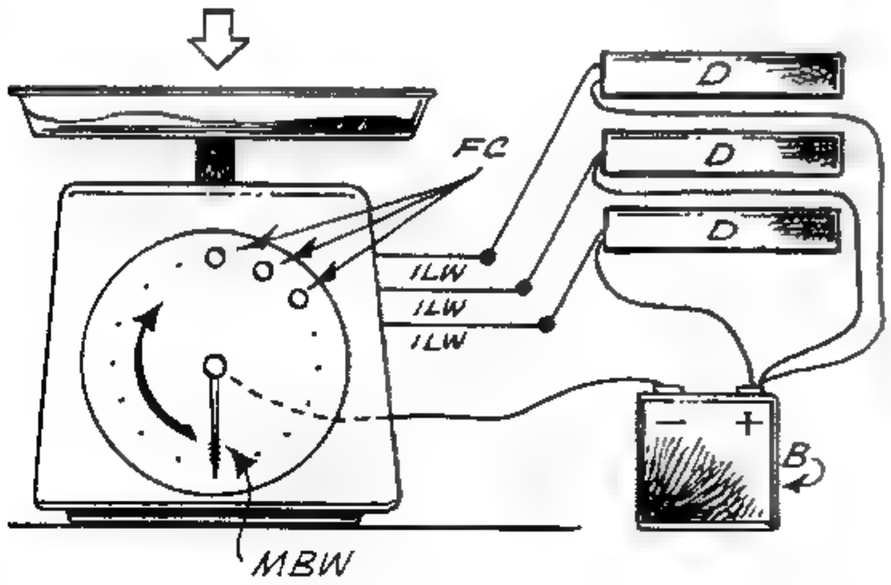
JJ = JAM JAR
B = BATTERY
ED = ELECTRIC DETONATOR
RM = RUBBER MEMBRANE (foil on inside)
FC = FIRING CONTACT
IW = INSULATED WIRE
EB = ELASTIC BAND
WS = WOODEN SUPPORT (with FC attached)

When depressed, the foil-covered lower side of the rubber membrane touches the firing contact and completes the electrical circuit. During deployment (and assuming less than solid ground), a wooden packing piece is inserted into the ground to provide firm support for the jar. A stone (not heavy enough to depress the membrane, but of such a size and shape as to ensure adequate downward transmission of foot pressure from a walking man) is positioned on top of the membrane and camouflaged with light debris.

KITCHEN SCALES MINE

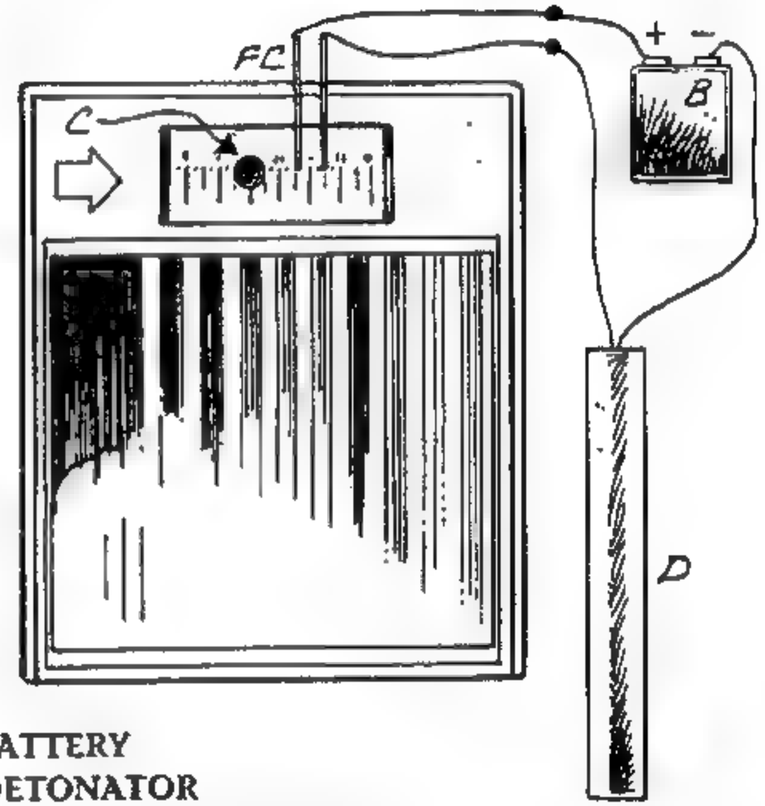
Mechanical kitchen or bathroom scales may be used in this type of device, which can be of the pressure-activated or pressure-release-activated design. A bathroom scale allows for a degree of control over what weight of person will trigger the device (in an antipersonnel configuration), thus preventing its being set off accidentally by children or animals.

KITCHEN SCALES (MULTIPLE FIRING SYSTEM)



MBW = METAL BRAID WIPER CONTACT (on moving arm)
FC = FIRING CONTACTS
B = BATTERY
D = DETONATORS
ILW = INSULATED LINK WIRES

BATHROOM SCALES VARIANT

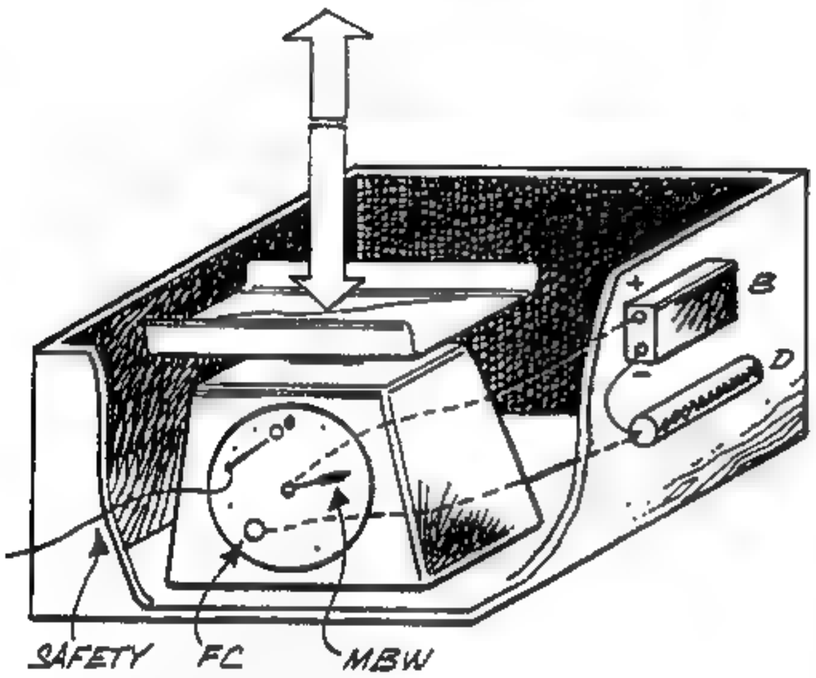


B = BATTERY
D = DETONATOR
C = CONTACT (on moving scale)
FC = FIRING CONTACTS (fixed through scale viewing glass)

Note that either of these devices can be converted for pressure-release activation by attaching the scale contact at zero after the weight is applied. This is most easily achieved by drilling a small hole through the scale face, scale, and the rear of the scale, through which a safety pin can be inserted once the scale is compressed to produce a reading.

The safety pin prevents the scale from returning during assembly operations and can be removed once the decoy weight is in place. It is also possible to utilize the scale safety pin as a trigger in its own right by attaching it to, for example, a pull wire.

AMMO BOX VARIANT



FC = FIRING CONTACT
MBW = METAL BRAID WIPER CONTACT
B = BATTERY
D = DETONATOR

Here the kitchen scale device is installed in an ammunition box and the lid fixed in place. Packing pieces are used to compress the scale if required. When the lid is removed, the scale returns to zero and the device explodes. Note the safety pin access hole in the side of the box. The safety itself is fitted to the scales, as always, prior to the installation of explosive components/power source.

As the scale is placed in the box, this wire is carefully fed out through the hole from the inside. With the lid and packing pieces in place and firmly secured, the pin can be removed by pulling on the wire. Note that in all such exercises (and assuming highly accurate measurements have not been taken) the weight of the lid/decoy object will actually be greater than that applied to rotate the scale initially. Thus, when the weight proper is applied there is a tendency for the scale to try and rotate further. This has the effect of "locking" the pin in place. It is important, then, not to use soft metal pins or wires for the pin itself, as they will bend and make it extremely difficult, if not impossible, to arm the device. Knitting and darning needles work well.

Note also that any indicated weight between zero and that displayed with the weight/lid in place can be used as the position of the scale firing contact. The greater the difference, however, the greater the margin of safety facilitated during arming.

A pressure/pressure-release version can be constructed by installing firing contacts both below and above the selected weight indication.

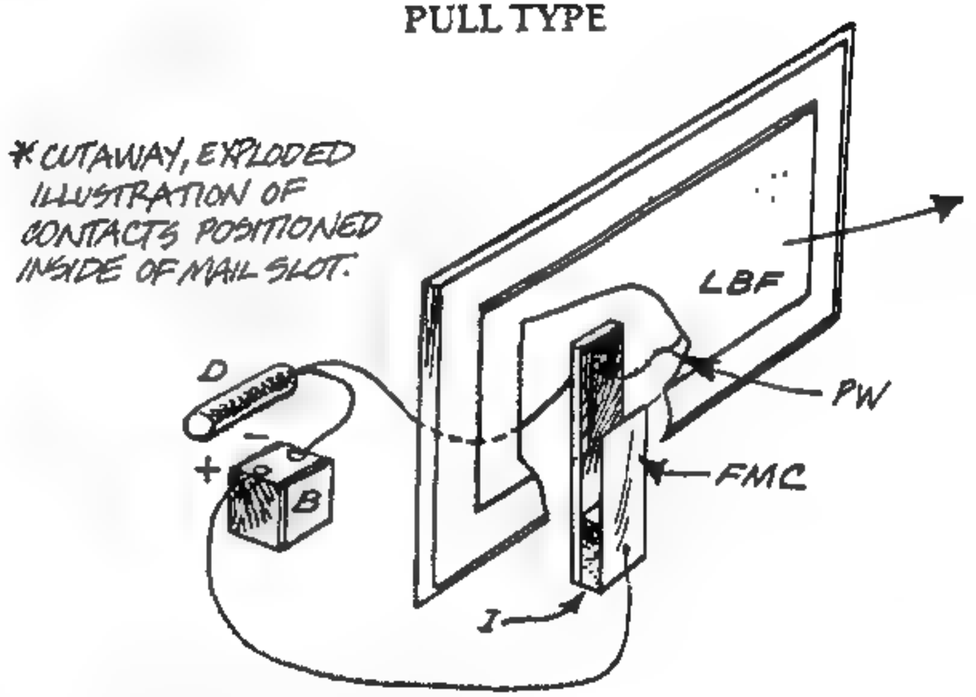
LOOTER BOOBY TRAP

A simple but effective technique suitable for use in, for example, an urban environment that is at imminent risk of being overrun by an enemy, is to convert anti-shoplifter alarm systems in stores displaying expensive goods into concealed explosive charges. It is applicable to both the physical (hardwired) type of system and the radio/electronic type in which a sensing screen at the exit of the store reacts to a small, passive electronic circuit attached to and concealed somewhere on the item.

These existing trigger circuits will cause the charges to fire when the first looter attempts to leave the store without first removing or disabling the passive components.

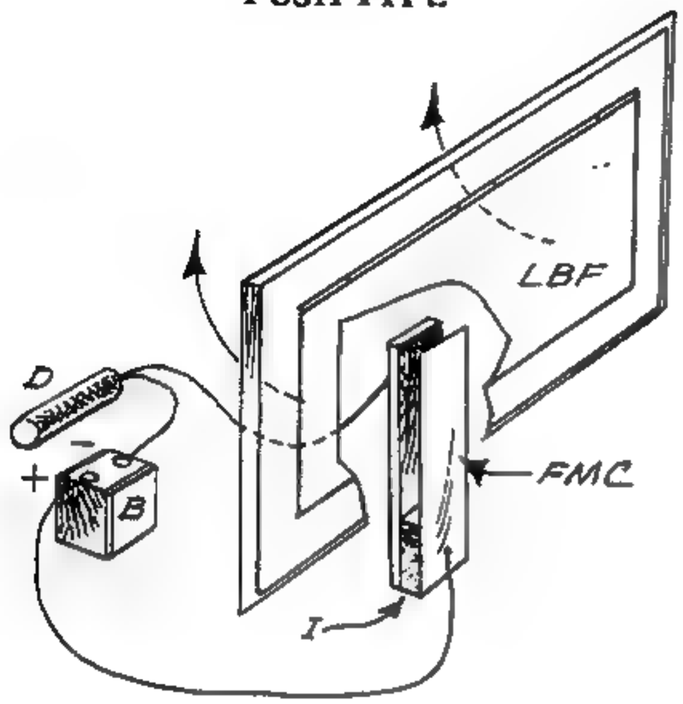
MAILBOX FLAP BOOBY TRAP

PULL TYPE



FMC = FLEXIBLE METAL CONTACT
B = BATTERY
D = DETONATOR
PW = PULL WIRE
I = INSULATION
LBF = LETTERBOX FLAP
Note: LBF, when lifted, pulls FMC via attached wire.

PUSH TYPE



A mercury tilt switch can be used in place of either of the designs.

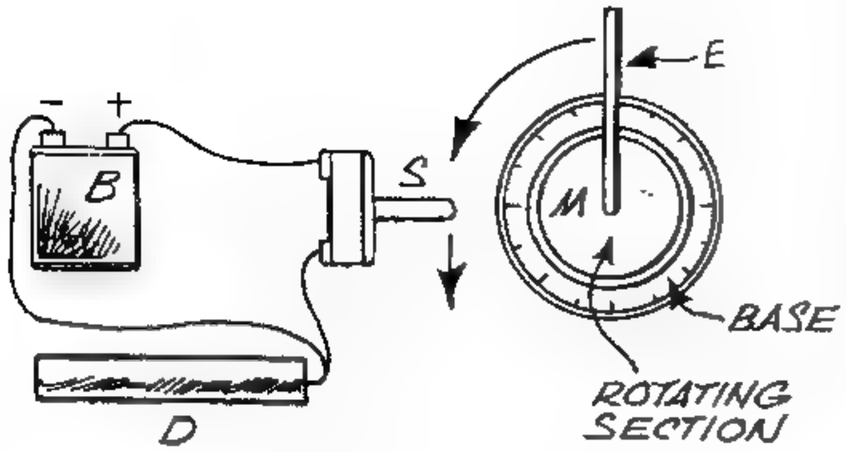
"MEMOPARK" TRIGGER/DELAYED ARMING DEVICE

The basis of this device is the "Memopark" type clockwork timer.

These are small, pocket-carried units intended to remind the user that it is time to return and "feed" the parking meter. They are available under various brand names and in differing shapes and sizes. Their overall principle of operation is similar, however, in that the timer is set by means of a simple rotary knob and set-time scale. When the selected time period elapses (typically an hour), the internal mechanism disengages and the innermost body of the device rotates, producing a "buzzing" noise and vibration.

This rotational effect makes it possible to adapt the device to any number of booby-trap applications.

* Note that the larger type of clockwork timer can be used, circumstances permitting, with only a little extra effort. Many clockwork kitchen timers incorporate a large central winding knob, which itself rotates when the "alarm" goes off. This knob may be removed if required to facilitate the attachment of improvised levers and so on. Further, the alarm winding "key" of most nonelectronic travel alarms, as well as that of standard clockwork alarms, rotates as the alarm mechanism unwinds.

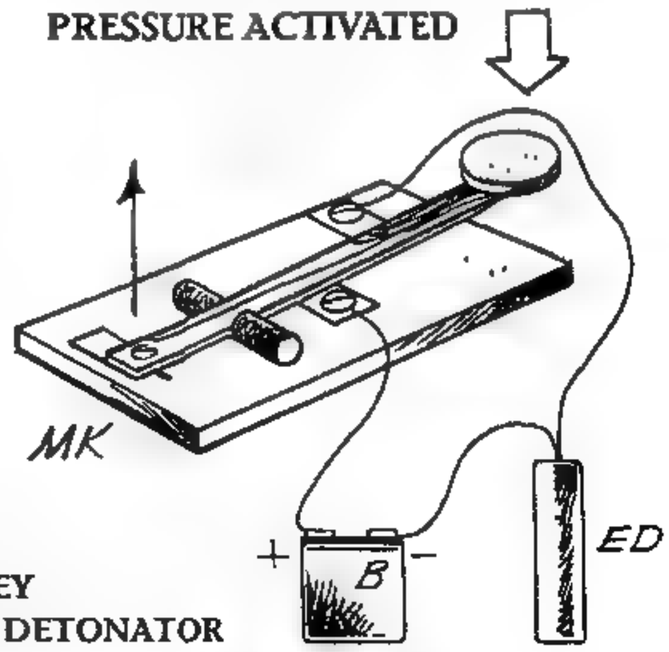


B = BATTERY
D = DETONATOR
M = MEMOPARK*
S = SWITCH
E = EXTENSION PIECE

MORSE KEY TRIGGER

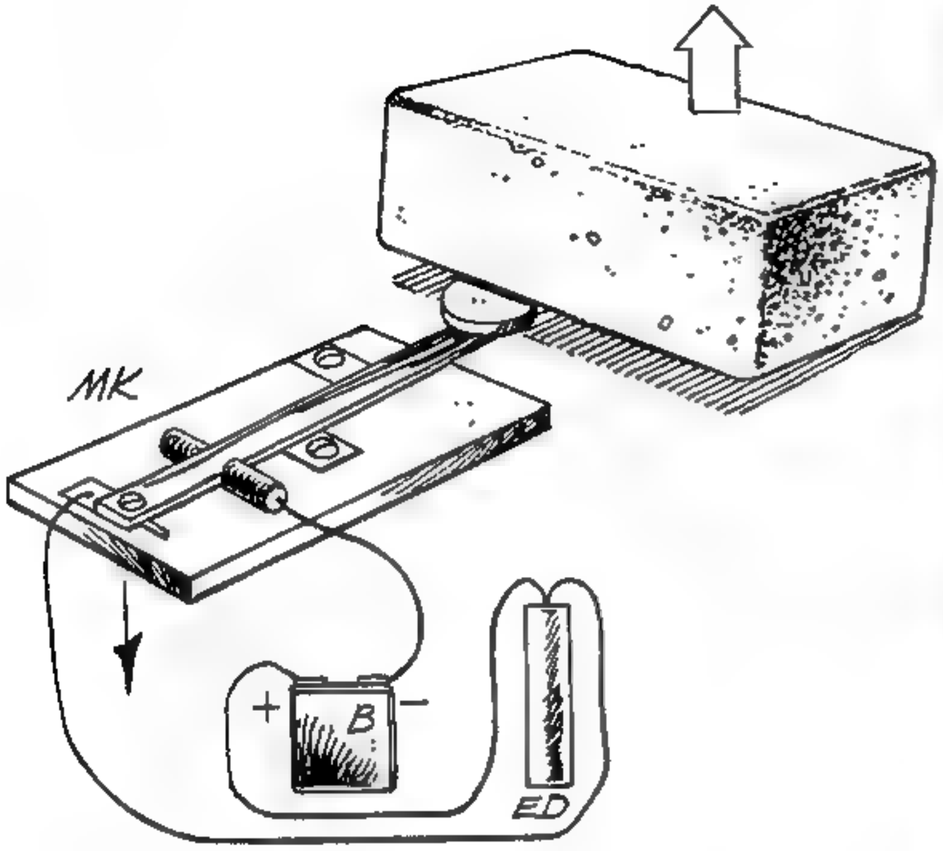
A simple pressure or pressure-release switch can be improvised from any type of available Morse key. The illustration below shows typical interconnections.

Such keys could be used as stand-alone triggers or employed in conjunction with radio sets which themselves contain the power source and explosive components.



MK = MORSE KEY
ED = ELECTRIC DETONATOR
B - BATTERY

PRESSURE-RELEASE ACTIVATED



MK = MORSE KEY
ED = ELECTRIC DETONATOR
B = BATTERY

MUSICAL MUG BOOBY TRAP

These are available as novelty gift items and also as advertising items with the mug playing the theme tune from some popular television commercial.

The type used here is based on a light-sensitive device and, in its original form, plays when the mug is lifted and stops when it is replaced.

The electronic heart of the device (a phototransistor detector and the tone generator circuitry) is sealed in a plastic housing that fits into the base of the mug. Such a mug can be converted into a booby trap in its own right or the electronics package can be removed for redeployment elsewhere.

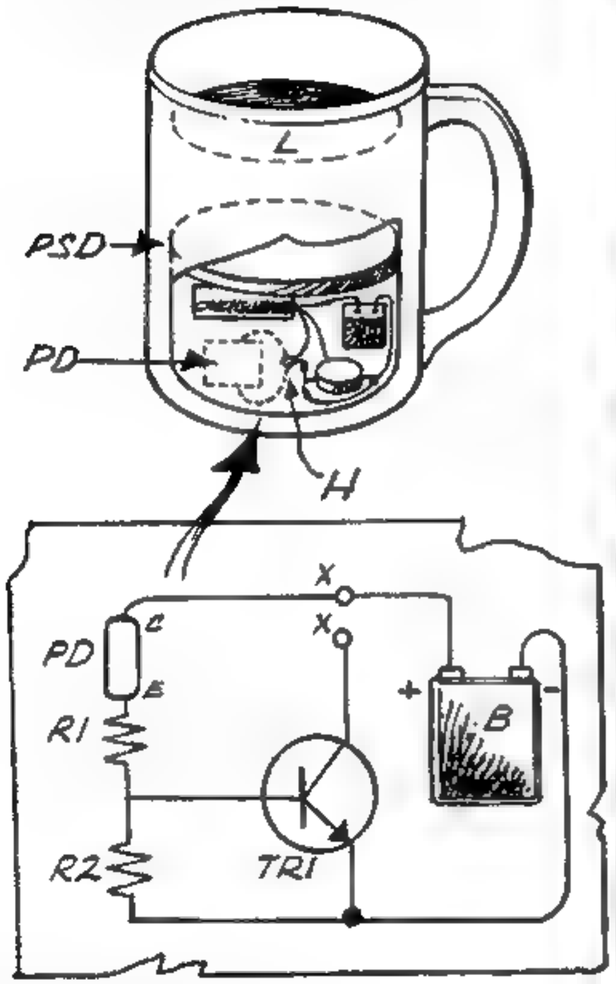
Note again that since the device reacts to light, final assembly must be undertaken with the base of the mug placed firmly on a flat surface (i.e., the phototransistor detector in darkness).

An expedient safety precaution is to glue a card table mat to the base of the mug using artist's adhesive or some similar material that allows for repositioning. The table mat itself is then secured to a surface within the target area using a smear of epoxy adhesive or such, the idea being that the mug will lift from the mat before the mat lifts from the table. As it is common for mugs and cups to have become "glued" to some extent

through the action of spilled tea or coffee, no suspicion will be aroused.

The required modifications are shown below.

MUG BOOBY TRAP

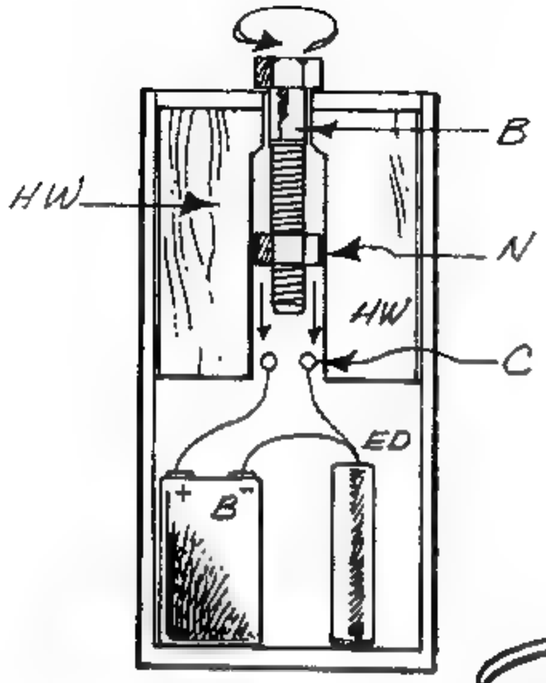


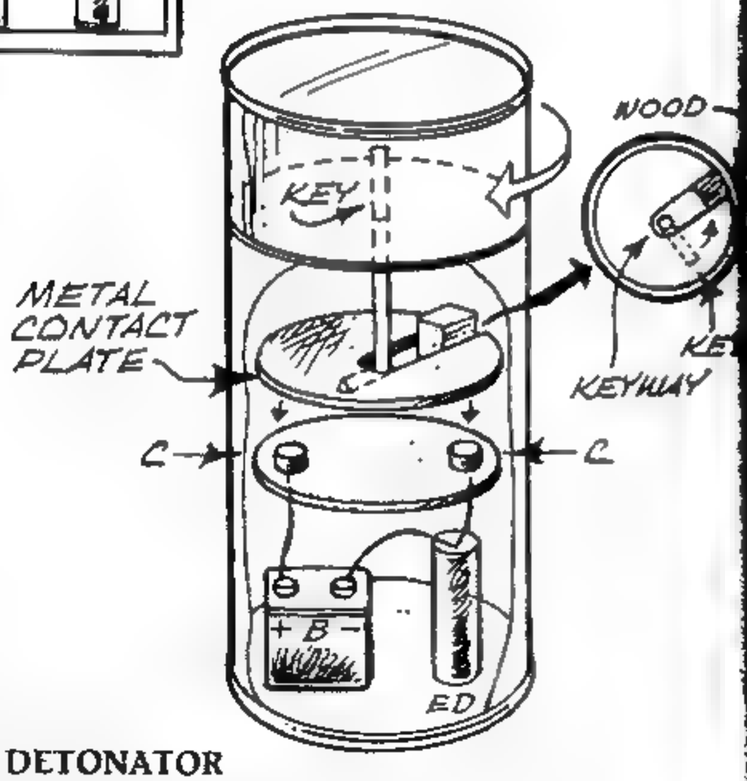
R1 = 1k5 RESISTOR
R2 = 10k RESISTOR
B = BATTERY STACK
L = LIQUID (tea/coffee) CAMOUFLAGE
TR1 = TRANSISTOR (BC 337 or equivalent)
H = HOLE DRILLED IN MUG BASE (for wires from PD)
PD = PHOTO TRANSISTOR DETECTOR
(from musical mug, on outside of mug base)
PSD = PLASTIC SEALING DISK (on shelf of silicone RTV adhesive/sealer)

NUT AND BOLT BOOBY TRAP

This assembly is normally incorporated into some type of barrier-securing mechanism that requires the target to remove it before entering or passing. It may also be employed as part of a stand-alone booby-trap device, e.g., as the apparent lid-securing mechanism on a metal storage cylinder. Such a cylinder may be improvised easily and deployed so as to suggest to the finder that it contains something of value or interest. When the bolt is unscrewed, the nut falls and completes the firing circuit via the two base contacts.

A variation of the stand-alone device utilizes the plastic cylinders used to transport various types of mortar and antitank rounds. These are modified by affixing a simple L-shaped key to the inside center of the existing screw cap in conjunction with a dropping contact. Construction details are shown below. When someone attempts to remove the cap, the key turns until it reaches the keyway, at which point the contact drops and completes the circuit. This type of trap will often succeed where a trembler/mercury tilt switch system would fail, because any weaponry the target finds will normally be considered safe to handle after initial "remote" movement. As always, the cases should be left with others so as to suggest an abandoned cache or hidden dump.

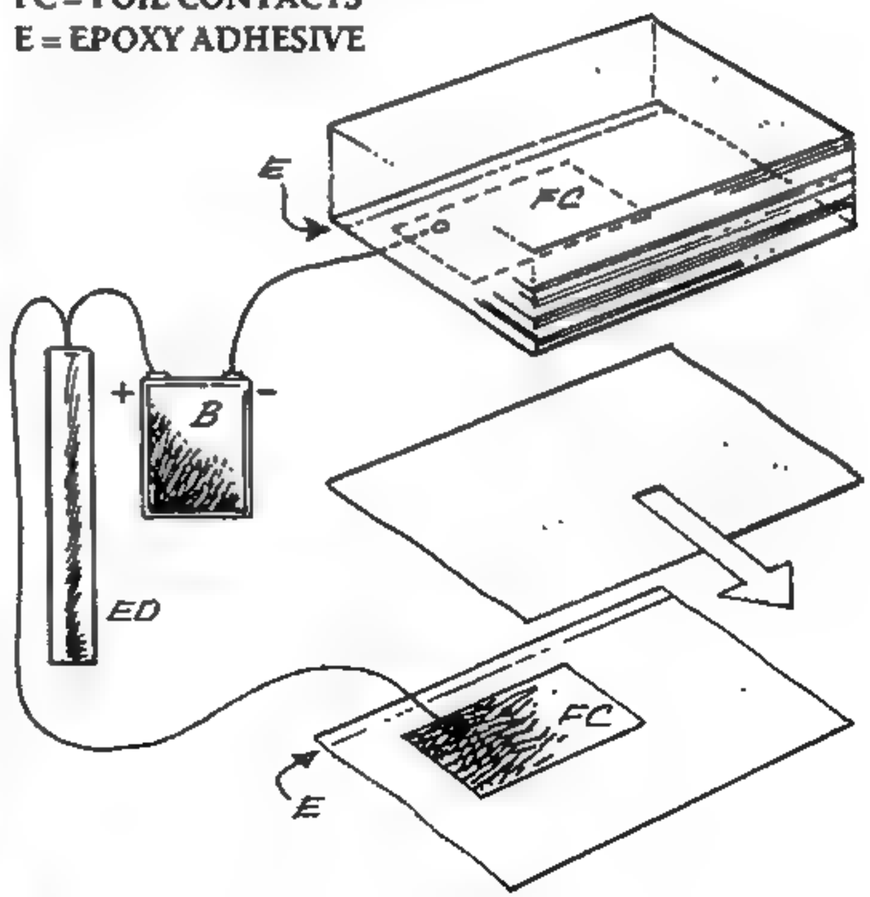




B = BOLT
N = NUT
C = CONTACTS
B = BATTERY
ED = ELECTRIC DETONATOR
HW = HARDWOOD INSERT(S) (shaped so as to prevent nut rotating and bolt being prematurely withdrawn and wedged firmly inside cylinder)

"ONE-SHOT" TOILET PAPER DISPENSER BOOBY TRAP

B = BATTERY
ED = ELECTRIC DETONATOR
FC = FOIL CONTACTS
E = EPOXY ADHESIVE



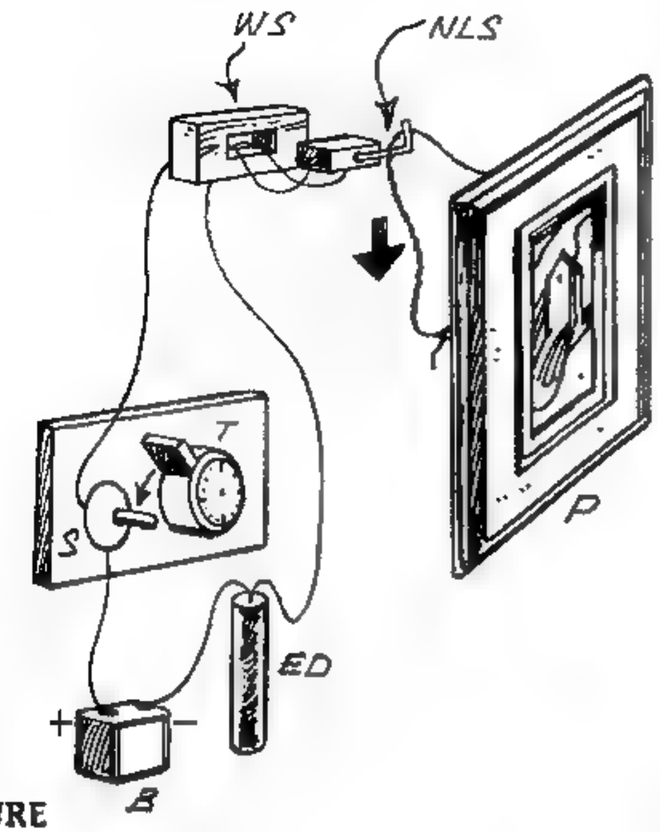
This is based on the type of toilet paper dispenser that holds boxed single sheets, as opposed to a roll. The box of sheets is modified so that when sheets are pulled as per normal use, an electrical circuit is completed. Deployment would consist of installing the modified box in a dispenser in the target area. The top and bottom stacks of sheets are secured to the box. The center (insulating) stack is not, and it is this stack that will be pulled free, thereby allowing the foil contacts to touch.

PICTURE FRAME BOOBY TRAP

Suitable for the booby-trapping of any wall-hanging object, this technique uses a simple nonlatching switch available from any electronics supply store. This is the type of switch that is normally open (NO), becoming closed only while held in the "on" position (or vice versa). In this instance, the switch is connected so that it is normally closed (NC). Thus, it can be considered to be in the "off" position when operated and "on" when released.

The timer having been set to give an arm delay of some twenty minutes, wedge the wooden support piece into place and hang the picture on the switch. When the timer arms the system, current will flow as far as the switch. When the picture is lifted, as for removal, the switch will spring back into the "on" position and the booby trap will explode. Two people can disarm the device safely if one maintains downward pressure on the switch/hanger while the other lifts the picture, bottom first, away from the wall and severs the firing circuit.

Create an area of sufficient size to conceal a small charge and power supply package at the rear of the selected object and install the components as shown on the following page.



P = PICTURE
ED = ELECTRIC DETONATOR
B = BATTERY
T = TIMER (as shown elsewhere)
S = SWITCH (press-to-make type)
WS = WOODEN SUPPORT FOR SWITCH
(wedged into opening)
NLS = NONLATCHING SWITCH (end heated and bent to form hook, if required)

PROXY BOMBS

This is an attack technique favored by various terrorist organizations in which an innocent member of the public, usually a motorist, is ambushed and forced to drive the explosive device to a border checkpoint or other target under threat of death. The motorist will be told that he has less than five minutes (for example) to get to the target before the device explodes, that he will be under surveillance the whole time, and that the device will be detonated remotely if any attempt is made to abandon the vehicle before the target is reached.

A variation is to seize any family member traveling with the proxy bomber and threaten to kill him or her if the instructions are not carried out to the letter.

The problem the security forces face here is that if they shoot at the vehicle as it races up to the checkpoint, or at the driver as he jumps out and runs for his life, they risk killing an innocent citizen (thereby generating masses of negative publicity). Thus, they must give each suspect vehicle the benefit of the doubt for as long as possible.

If the timing and location factors are well-calculated, then even in the best-case scenario the proxy bomber will just barely have time to reach the target,

jump out, warn nearby personnel, and run like hell before the device explodes.

REMOTE-CONTROL CARRIER-CURRENT INTERCOM DEVICE

This is based upon a pair of FM intercom units, available from Radio Shack and the like, which superimpose an audio signal onto the household AC supply carrier current. The type that incorporates a call-tone button was used here.

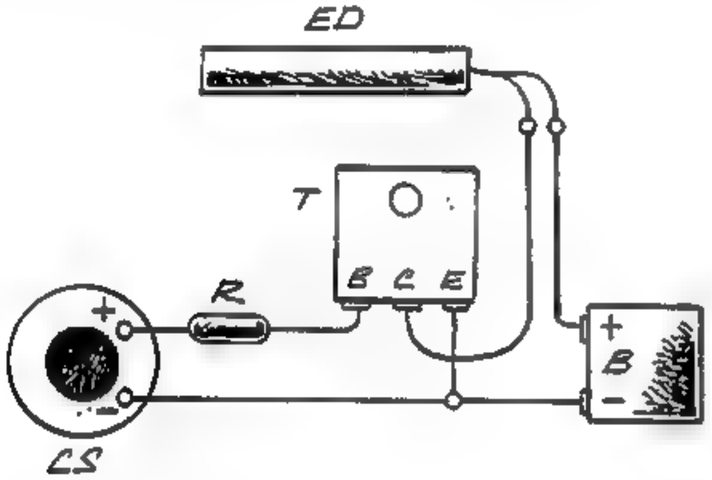
Modifications are shown on the following page. When the call button on the trigger unit is pressed, the device in the target location will explode. If, upon testing, it is found that the current available at the sounder inputs is insufficient to fire the detonator, a transistor can be installed as shown to divert additional firing current.

Although these units are sold primarily for interroom/interoffice communication, they actually have sufficient power to operate over distances of up to half a mile or so, providing that the outlets in the two buildings share the same AC supply phase. Such a device (less its usual case), disguised as required and installed in a target office or home, could be triggered easily from an adjacent building.

Most of the available wireless intercom systems operate on a set of standard carrier frequencies. Therefore, there is the risk that an unknown user nearby might inadvertently trigger the bomb. This risk is obviously greater in urban business areas than semirural ones.

Monitoring the selected frequency at the time of day/night when the attack would be made will help determine if other same-frequency users exist and operate during the appropriate times.

It is also a simple matter to incorporate a mechanical/electromechanical or electronic timer system into the unit to delay arming until some time after it has been installed. Such a device could be tapped into the supply with insulated alligator clips (snap connectors can also be used) and concealed inside a television or any similar item of carrier-current-powered electrical equipment.



B = BATTERY
BCE = BASE, COLLECTOR, EMITTER
T = TRANSISTOR (NPN power type)
R = RESISTOR (200 ohm)
CS = CALL SOUNDER TERMINALS
ED = ELECTRIC DETONATOR (connected to call sounder terminals)

REMOTE-CONTROL PHONE BOMB

The heart of this device is the remote-control system from an answering machine. It should be the type that incorporates a short sequence of tones (used to access messages and change the outgoing message remotely) rather than a single tone, and it should also be capable of remote on/off operation.

Remove the selected answering machine from its casing and make tests to determine suitable electric detonator connection points. These are any two points through which adequate current flows when the remote system is activated; they will typically be the message tape rewind or play motor power connection points.

Now determine what the unit's actual operating voltage current requirements are. Most such machines are supplied with a plug-in transformer that drops the AC supply current to a low DC voltage. Normally the voltage and current requirements will be written on the transformer itself.

Other types may incorporate an internal transformer, the output voltage of which can be determined by testing. Once that is established, a battery pack of the required size can be constructed. For example, if the unit transformer output is 12 volts at 500 milliamps, a 12-volt, 1-amp battery would power it for two hours. In

practice, the battery stack would be assembled so as to ensure correct operation for the required prefiring period (normally no more than a few hours), plus sufficient energy to spare to fire the detonator.

As even "D Cell" type flashlight batteries are available in 4 AH (ampere-hour) size, there will be little problem assembling a battery stack that will provide sufficient prefiring power and still have adequate current to fire the detonator when triggered.

Remember that when connected in series (positive to negative), the available voltage is that of the single battery multiplied by the number of batteries in the stack, while the available current is that of the single battery.

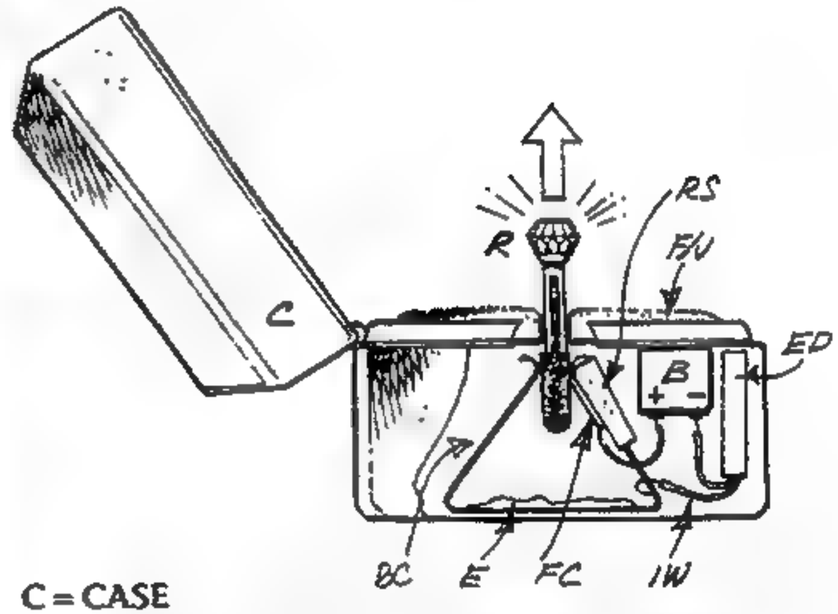
When connected in parallel (positive to positive, negative to negative), the available current is that available from a single battery multiplied by the number of batteries in the stack while the available voltage remains the same as that for the single battery.

Depending on the specific scenario, it may be possible to tap the device into the AC supply in the target area, making the battery-pack technique redundant. It may be connected to the phone line at any convenient point. For an attack against a specific person, this would be as close as possible to any phone the target might be expected to answer when called.

For a more general attack, almost any accessible location would do. Telephone wires frequently run along skirting boards and therefore pass behind any number of floor-standing items, which themselves can be used to conceal the completed package. Firing is achieved by calling the target number and operating the remote-control handset.

Disassemble as much of the remainder of the unit as is practicable, maintaining at a minimum the power supply and remote-control circuitry. Refit this into a plastic box along with the explosive package or disguise as required.

RING AND RING CASE BOOBY TRAP



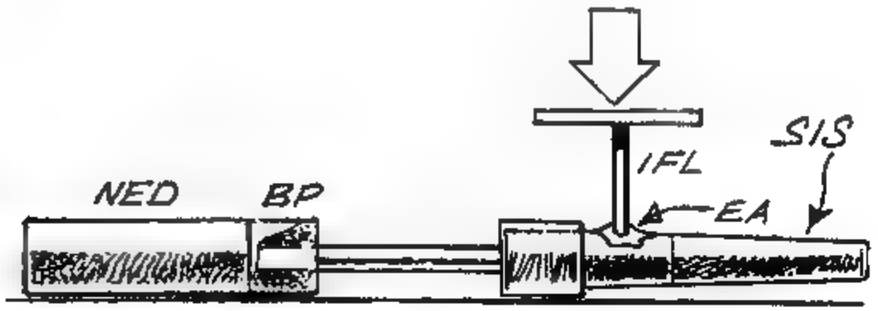
C = CASE
R = RING (lower quarter wrapped with insulating tape)
FC = FIRING CONTACT (foil)
ED = ELECTRIC DETONATOR
B = BATTERY
F/V = FOAM/VELVETEEN LINING
RS = RUBBER SLEEVE
E = EPOXY ADHESIVE
IW = INSULATED CONNECTING WIRES
BC = BUTTERFLY CLIP (miniature type, lever "wings" removed)

Here an apparently valuable item is used as a lure to trap the unwary enemy. An expensive-looking ring complete with case (or, if necessary, replaced into a larger bracelet or watch case) is selected and modified as shown below. The battery, electric detonator, and a small explosive charge are concealed in the ring case. The ring, installed as per usual, holds two contacts apart. When pulled from the case, however, the contacts touch, thereby completing the circuit and causing the detonator to fire.

SELF-IGNITING INCENDIARY

The basis of this device is a self-igniting, portable gas-soldering iron or heated hair-curling iron. These items generate heat without the traditional burning flame, and no external flame or heat source is required to start them. Essentially, a heated catalyst generates ultrainfrared and infrared radiation when subjected to a stream of evaporated butane gas at high speed. Regulating this stream of gas allows for temperature regulation.

EXPLOSIVE CONFIGURATION



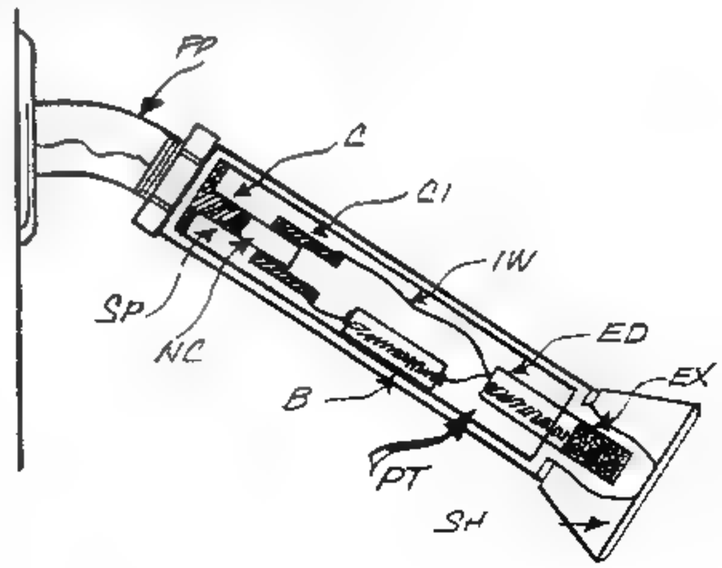
EA = EPOXY ADHESIVE
BP = BLACK POWDER
IFL = IMPROVISED FIRING LEVER
NED = NONELECTRIC DETONATOR
SIS SELF-IGNITING SOLDERING IRON (bit removed)

In this case, the iron is turned on by rotating the central collar. An improvised firing lever has therefore been added (secured with epoxy) to transfer downward pressure into the required rotational effect. Other types may require a body-mounted switch to be moved forward, and these lend themselves well to vertical mounting.

One possible use of the self-igniting hair curler unit would be in arson operations. The curler unit could easily be emplaced so as to suggest to any investigative team that it had fallen or been left carelessly, causing an accidental fire. This is especially so when one considers the numerous inflammable preparations and materials likely to be found (legitimately) in close proximity to areas in which the curler unit would be used (hairspray, nail polish remover, etc.).

SHOWER HEAD BOOBY TRAP

SH = SHOWER HEAD
B = BATTERIES
ED = ELECTRIC DETONATOR
IW = INSULATED CONNECTING WIRES
FP = FLEXIBLE PIPE
SP = SLIDING PLUNGER
CI = CONDUCTIVE INSERT
C = CONDUCTIVE AREA OF PLUNGER
NC = NONCONDUCTIVE AREA OF PLUNGER
EX = EXPLOSIVE
PT = PREPARED PLASTIC TUBE (containing components as shown)



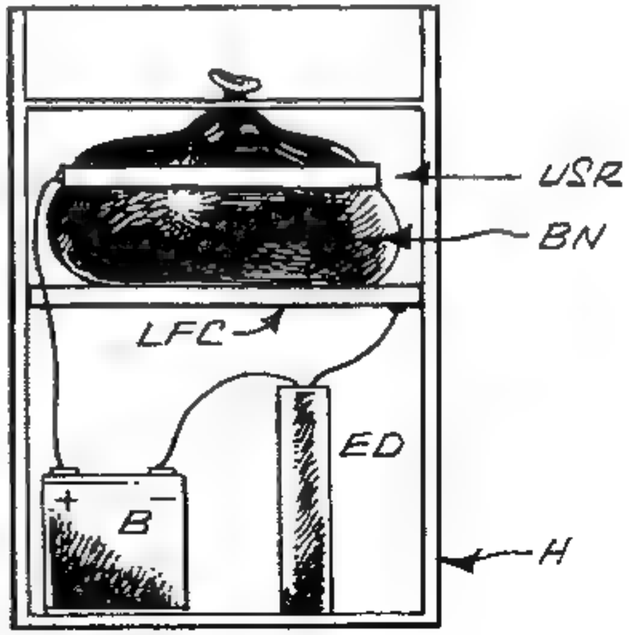
The assembly shown here is installed into the head and flexible shaft end of the target shower. In operation, the pressure of the water causes the sliding plunger to close, thereby completing the electrical circuit and allowing the detonator to fire.

It is, of course, vital that the shower assembly be completely dry before electrical firing components are installed. To negate the risk of the plunger sliding forward under its own weight, the flexible pipe/head should be kept in an upright position.

SLIP-RING/BALLOON TRIGGER

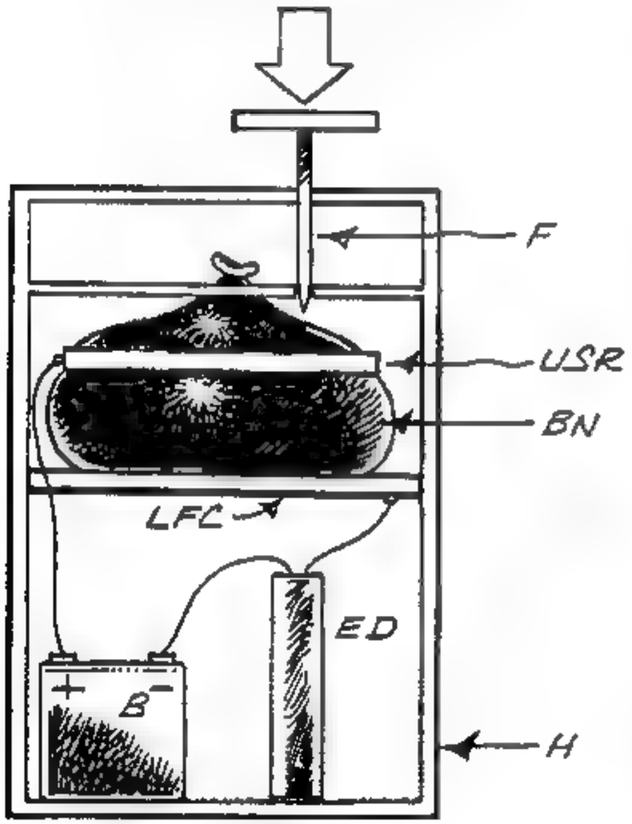
This trigger may be used as part of a booby trap proper or as part of a time-bomb device. The principle is simply that the partially inflated ballon holds the upper slip-ring in place until the balloon material is pierced or natural leakage causes it to deflate to such a degree that the ring falls.

TIME-BOMB CONFIGURATION



BN = BALLOON
USR = UPPER SLIP RING FIRING CONTACT
LFC = LOWER FIRING CONTACT
ED = ELECTRIC DETONATOR
B = BATTERY
F = FIRING PIN
H = HOUSING (any nonconductive material)

BOOBY-TRAP CONFIGURATION



SPARE WHEEL BOOBY TRAP

As proper and regular security checks will often reveal the existence of the classic "lunchbox" type of booby trap when hidden beneath a vehicle, it might be worth investing slightly more reconnaisance time in the project, with a view to determining the usual positioning of the spare wheel.

These are commonly in the trunk, but certain off-road vehicles will have them mounted to the hood or some other exterior spot. Thus, a device can be concealed within a replacement spare wheel of the correct type, which is then substituted for the original.

Where possible, a degree of practice should be undertaken on a similar vehicle, with a view to reducing the time taken to make the substitution. Similarly, the replacement wheel should sport a tire of the correct pattern. In the vast majority of scenarios, however, matching wheel and tire type will not be a problem, as the target vehicle will be equipped with standard types that are easy to obtain.

Other things being equal, and assuming a sensibly timed operation, a two-man team with even minimal practice will be able to open the trunk of a target vehicle, remove the existing spare, and substitute the replacement in less time than it will take the

owner or others to hear and react to the vehicle alarm.

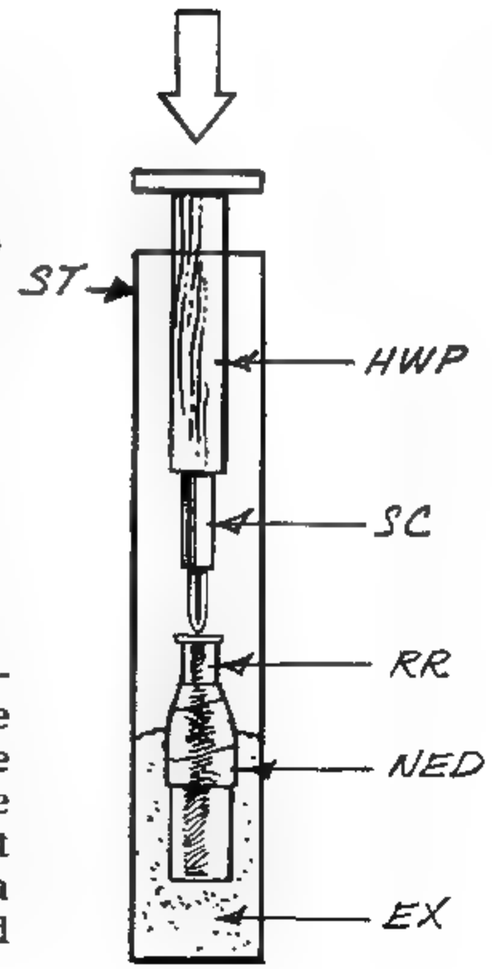
Even if the trunk lid is left open, the owner and the majority of reacting security personnel will assume that a theft was attempted. A search for the more usual type of explosive devices will be made if the target's position justifies it, but it is unlikely that this device will be found.

The principle applies to other, easily substituted in-car items, such as loose seat cushions, the rear seat squab (also the front seat squabs in most military vehicles), decorative wheel covers, and so on. Where this latter type of removable decorative trim is employed, the risk of the vehicle alarm being triggered will be lower. Storage areas containing stocks of spare wheel and tire assemblies should not be overlooked either.

Several foreign cars (notably some of the Nissan line) incorporate plastic wheel arch covers that are secured with screws and clips. It is simple to lever part of these covers open and insert a small package without causing damage or triggering vibration-sensitive alarms.

SPRING CENTERPUNCH BOOBY TRAP

ST = STEEL TUBE
SC = SPRING CENTER PUNCH
RR = RIFLE ROUND (head pulled, powder content intact, secured to NED with tape)
EX = EXPLOSIVE CHARGE
NED = NONELECTRIC DETONATOR
HWP = HARDWOOD DOWEL PRESSURE PIECE



Spring centerpunches, available from most hardware stores, differ from the manual type in that they incorporate a powerful spring and pressure-release mech-

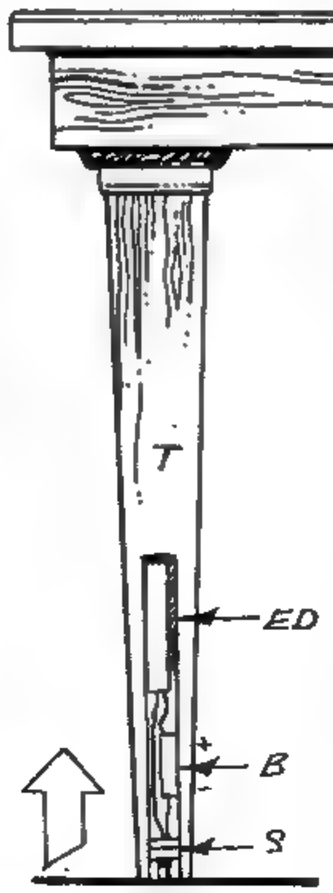
anism. In operation, the required punch pressure is set and the tool pressed firmly against the metal object to be marked. When the set pressure-release point is reached, the internal mechanism "fires" the point downward, thus negating the need for a blow to be struck with a hammer.

Here, the tool is used to fire a rifle or pistol cartridge that is inserted into a nonelectric detonator so that the firing of the round causes the detonator to explode.

As always with such devices, some sort of improvised packing should be inserted into the hole first if the ground is unlikely to provide good resistance to the downward pressure.

TABLE LEG BOOBY TRAP

Here the leg of a large wooden table is drilled to take an explosive charge and firing circuit assembly. The trigger is a release-to-make/release-to-break switch, which, when the table leg clears the floor, is allowed to spring out fully, thereby completing the electrical circuit.



The action of this type of switch requires that it be released after each depression to change to the "on" or "off" state. Thus, in the final stage of assembly the switch would be under pressure in the release-to-make mode, meaning that it would complete the electrical circuit upon its next release, causing the attached device to explode.

B = BATTERY
ED = ELECTRIC DETONATOR
S = SWITCH (release to make/break type)
T = TABLE LEG (drilled/hollowed as shown)

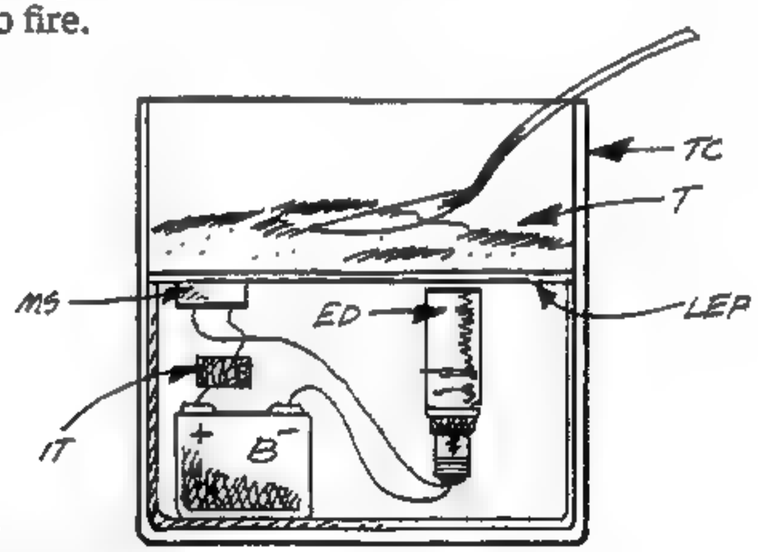
TALKING TEDDY BOOBY TRAP

This device is based on the older type of "talking" teddy bear that, when its cord is pulled, plays a recording.

The toy is simply disassembled and a nonelectric detonator/flash-initiator/explosive package installed in place of the existing parts. The original pull-to-talk cord is retained and is connected to the pull-to-fire flash initiator. The toy is deployed so that insurgent troops/security-force personnel will be likely to find and loot it for a souvenir. Few will resist the temptation to try out the toy.

TEA CANISTER BOOBY TRAP

Here a lever-type microswitch is installed in the canister in such a way that a subsequent attempt to scoop out tea will depress the microswitch and cause the booby trap to fire.



B = BATTERY
TC = TEA CANISTER
T = TEA (for camouflage)
ED = ELECTRIC DETONATOR
LEP = LEVER EXTENSION PIECE
IT = IMPROVISED TIMER (for delayed arming purposes)
MS = MICROSWITCH (connected so as to turn "on" when depressed)
Note: All interconnecting wires are insulated.

The switch is mounted centrally on one of the canister walls, and a lever extension piece is added to the existing lever. This extension piece must be of a lightweight material such as cardboard or plastic, cut so as to just fit comfortably into the canister body.

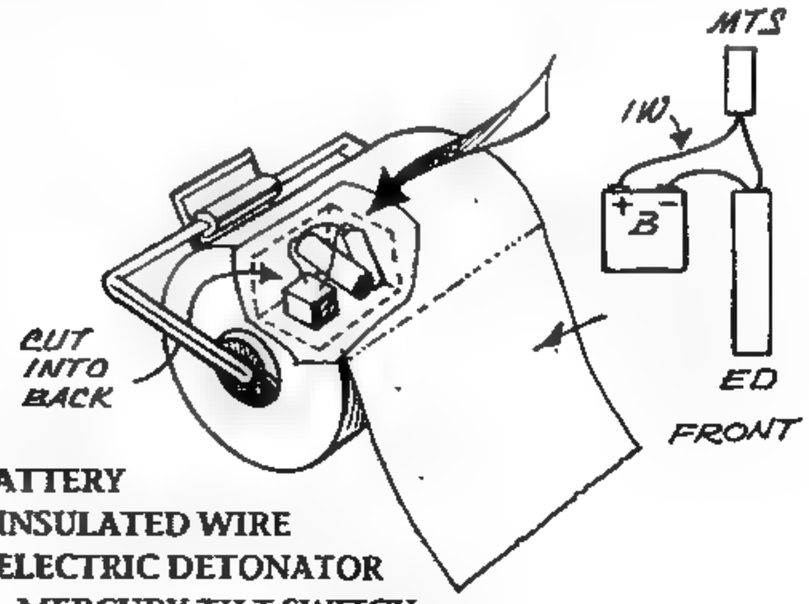
Apply a thin coating of spray adhesive to the top of the extension piece and sprinkle some tea over it for camouflage. The extension piece can be attached to the switch lever with any powerful adhesive.

Using a bulb in place of the detonator, conduct tests to confirm that the weight of the extension piece and tea camouflage is insufficient to depress the switch when assembled as shown. Adjustments to compensate for the extra weight can, if necessary, be made by bending the existing lever upward slightly and/or inserting a tiny piece of sponge between the underside of the switch lever and the switch body.

TOILET ROLL/PAPER TOWEL BOOBY TRAP

This assembly may be partially prepared before being transported to the target area, where final assembly will take place.

Quite simply, when the roll is rotated as in normal use, the mercury tilt switch closes, completing the electrical circuit. Note that the switch is mounted so as to require maximum movement before operating, and also that the toilet roll is cut as shown so that signs of tampering are not visible upon casual inspection.

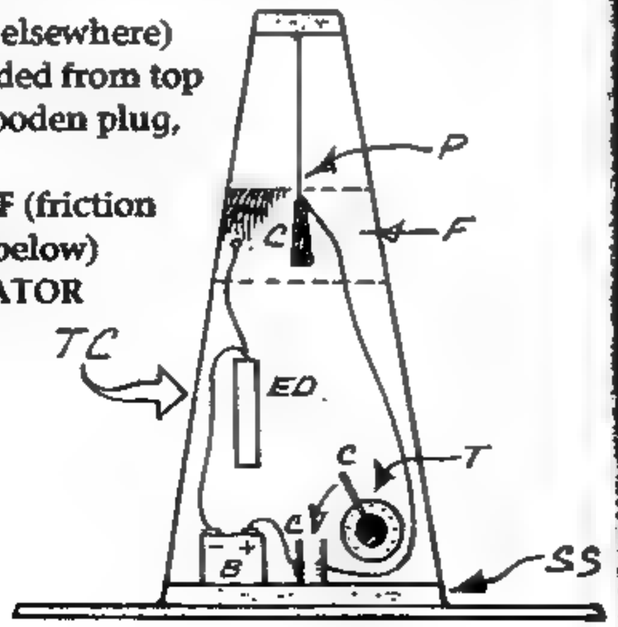


B = BATTERY
IW = INSULATED WIRE
ED = ELECTRIC DETONATOR
MTS = MERCURY TILT SWITCH

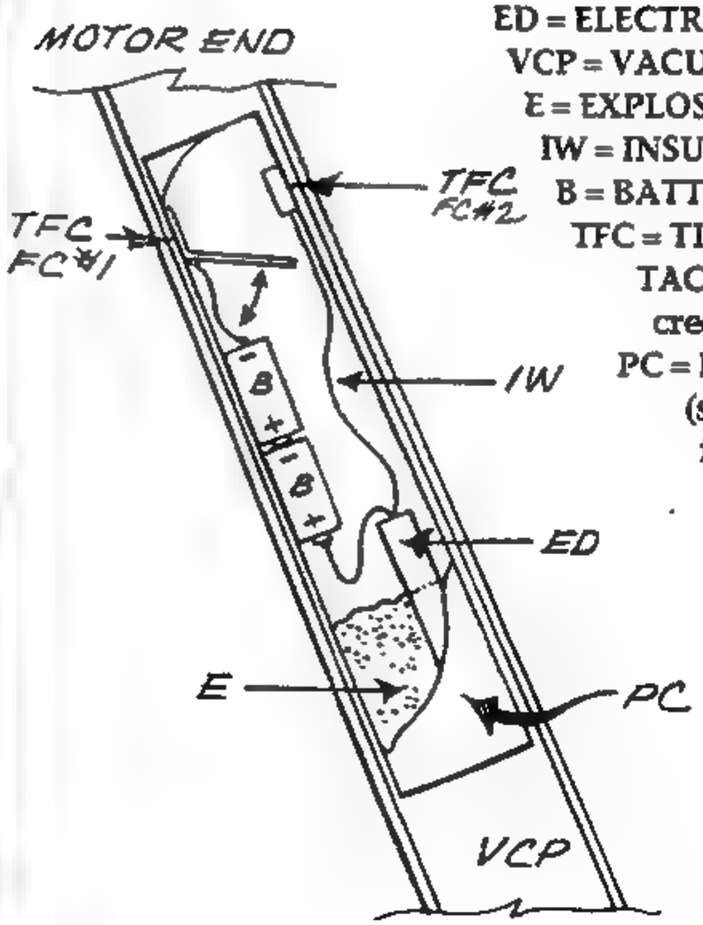
TRAFFIC CONE BOOBY TRAP

Here a simple pendulum/contact assembly causes the device to explode when the cone is moved. The timer permits safe deployment. This type of urban booby trap is particularly effective, as all similar cones will be treated as suspect after the initial explosion. As such cones are typically employed by security units in traffic-control operations to channel vehicles into or away from a specific area, the confusion and delays are considerable.

T = TIMER (as described elsewhere)
P = PENDULUM (suspended from top center of cone via wooden plug, if required)
SS = SUPPORTING SHELF (friction fit, pressed in from below)
ED = ELECTRIC DETONATOR
C = CONTACT (conductive material)
TC = TRAFFIC CONE
B = BATTERY
F = FOIL



VACUUM CLEANER BOOBY TRAP



ED = ELECTRIC DETONATOR
VCP = VACUUM CLEANER PIPE
E = EXPLOSIVE
IW = INSULATED WIRE
B = BATTERY
TFC = TINFOIL FIRING CONTACTS (FC #1 creased to create "hinge" action)
PC = PLASTIC CYLINDER (selected for friction fit into vacuum pipe)

Assemble the components into the plastic tube as shown and carefully insert the whole into one of the vacuum cleaner pipes (or, if access is limited, assemble into an identical pipe beforehand and substitute the entire pipe on site).

When the vacuum cleaner is used, firing contact 1 will be sucked up against firing contact 2, thereby completing the circuit and causing the device to explode.

VEHICLE ALARM DISABLING METHODS

As the majority of private vehicles will have alarms, it can be useful to be able to defeat or disable them.

Here again, a far higher degree of success can be expected if some time is taken to study a vehicle of a make similar to that of the target vehicle. This can be most easily accomplished by renting a similar model, taking the usual precautions against leaving a trail. It is also useful to study the available vehicle alarms; close reconnaissance of the target as he/she enters/exits the vehicle will provide an idea of the type of alarm actually fitted to the target vehicle (assuming this intelligence is not already available).

For example, if the target is seen to point a small keyring type device at the vehicle before opening a door or after exiting, the odds are that an infrared, radio-frequency, or ultrasonic armed alarm is installed. If the target is seen to turn a key fitted to the vehicle bodywork, then a manually activated alarm is implied, and use of a lock-picking tool will allow access to the vehicle.

A small pod incorporating two small circular "windows," visible on top of the dashboard, suggests an ultrasonic field alarm, which will be triggered by any change in the interior condition of the vehicle (even an arm reaching in through a window).

Studying the available alarm outfits (and there are really only half a dozen basic designs, all others being variations on a theme) will make it possible to work out ways to beat them. The remote-operated systems (activated by a small key-ring transmitter), for example, can be "picked" electronically, given access to a unit capable of transmitting sequentially random combinations of ultrasonic tones. Advertisements have appeared in the trade press for such devices, and home construction is well within the scope of the serious electronics hobbyist.

As the number of possible ultrasonic combinations can be enormous, the "electronic pick" will sometimes need up to thirty minutes to hit upon the correct combination. In practice, however, the possible number of combinations in most low to medium-level alarm systems will be but a few thousand, and the "electronic pick" will hit upon the required one in a matter of seconds.

An effective disabling technique involves the use of expanding polyurethane foam, available in aerosol form. By improvising a flexible tube attachment for the nozzle, it is possible to pump foam into the mouths of alarm loudspeaker horns and sirens via the front underside of the vehicle or the radiator grill. Do-it-yourself rustproofing kits often include a very useful selection of flexible plastic tubing, nozzles, and trigger mechanisms.

It is often possible to feed a length of stiff-but-flexible wire up from the underside of the target vehicle into the engine compartment and into the mouth of the rotating vane type of alarm siren, thereby preventing its rotation.

Usually, examining the vehicle from the front underside area will reveal the exact position of any such alarm sirens, as they are typically installed with a view to maximum release of noise (i.e., close to the radiator grill opening). An alternative to injecting sound-lessening foam is to use the long, flexible "grabbers" used for picking small screws and the like out of

awkward places to literally rip the power input wires from a vehicle horn or siren. To ensure a slip-free grip, the "grabber" end of these tools must usually be modified a bit—bending the jaws back further on themselves to compensate for their inherent lack of rigidity will generally be sufficient.

Several vehicle alarms operate on the current-drop principle. This means that the alarm module monitors the vehicle's electrical circuit and triggers when the circuit current changes, as when a door courtesy light comes on. These can be defeated by opening a door with extreme care and catching the door switch (with a length of thin metal strip, for example) before it releases fully and turns on the interior light.

There is always a degree of play in such switches, and it is possible on many vehicles to open the door enough to allow access to the window handle without the switch operating. The window can be rolled down and the door pushed shut, allowing items to be inserted or removed through the window without the risk of triggering the alarm. When the operation is complete, the door is carefully opened again, the window rolled up, and the door closed and locked.

On many vehicles it is also possible to access the positive battery cable or battery earth cable from under the front of the vehicle. In this case, insulated cutters (with improvised handle extensions, if necessary) can be used to cut one of these cables. If it appears that additional power supply or earthing wires have been connected directly to either of the battery posts, these should be cut along with the main cable.

Rather than cutting a main supply cable/earth wire, it is preferable to cut any wire that obviously serves an alarm siren or speaker horn at the siren/horn end. It is unusual for the vehicle owner/driver not to enter the vehicle, even if he realizes that the alarm is not functioning.

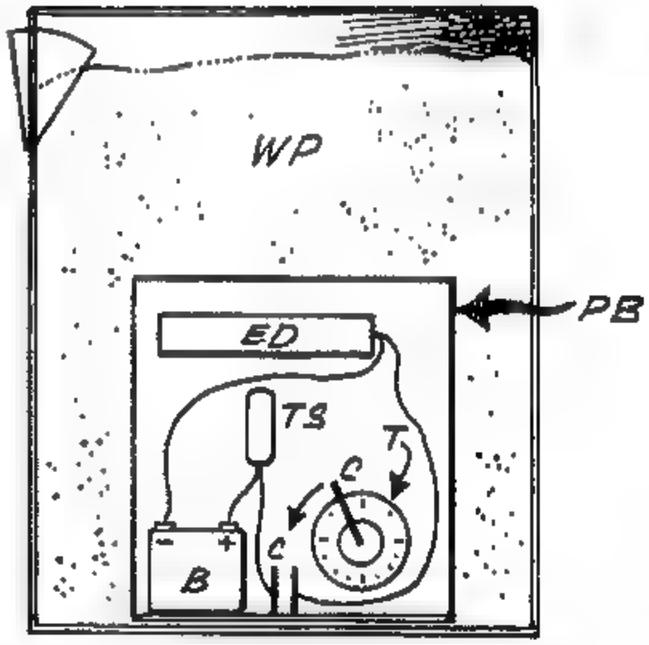
VIDEO ALARM BOOBY TRAP

Video alarms, available from many outlets, often take the form of a VHS videocassette into which a motion-sensing device and power source have been installed. If an attempt is made to move (as in steal) the VCR, or if the cassette is ejected, the circuit reacts and sets off a high-volume sounder.

It is possible in many instances to simply disconnect the sounder and replace it with an electric detonator/explosive package. The type of alarm selected should be one that incorporates variable arm/react delay times, and these should be adjusted to their maximum (i.e., maximum delay before arming after switching on), and proper checks for an absence of current must be made before any explosive components are installed.

WASHING POWDER BOX BOOBY TRAP

Access the inside of the box through the base by carefully prying it apart with a sharp knife. Invert the box during this operation to prevent the contents from escaping. The prepared module described below is now inserted and pressed down to a central position in the box.

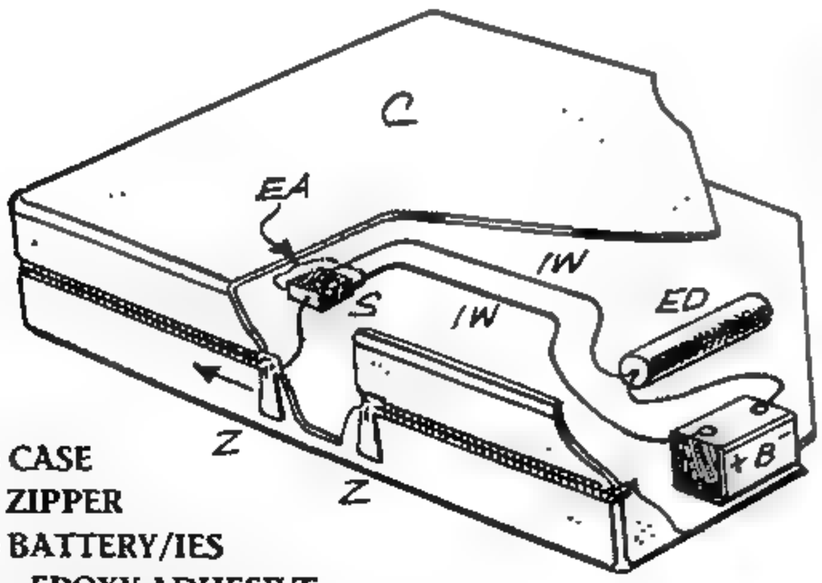


Replace the base using any available adhesive. Once the timer arms the system, any inversion of the box will complete the circuit and cause the device to explode.

ED = ELECTRIC DETONATOR
T = TIMER (as described elsewhere)
B = BATTERIES
PB = PLASTIC BOX
TS = TILT SWITCH (mercury type or improvised)
WP = WASHING POWDER
C = CONDUCTIVE CONTACTS

ZIPPERED SUITCASE BOOBY TRAP

The type of suitcase used here is of the two-zip, semi-rigid type. The modification consists of installing a switch, firing circuit, and explosive package assembly to the inside back of one of the zippers, as shown below. Access is through the other zipper. The explosive assembly may be constructed off-site and installed into a specific target case at some opportune moment.



C = CASE
Z = ZIPPER
B = BATTERY/IES
EA = EPOXY ADHESIVE
IW = INSULATED WIRE
ED = ELECTRIC DETONATOR
S = SWITCH (with improvised extension, if required)

APPENDIX I: IED OVERVIEW COURSE (FRAMEWORK)

This section is meant to be used as an aide-mémoire by persons involved in training others in improvised explosive device familiarity/awareness and counterterrorism techniques. It is only a framework on which to hang specific, contextually appropriate details, and it takes the form of a "script" based on a typical lecture as conducted by the author.

Props

- A selection of safe, cutaway examples of IEDs (pipe bomb, book bomb, etc.).
- Various tilt/reed/pull/push switches.
- Various improvised timing devices.
- Several dummy booby-trap circuits with bulbs connected as per the detonators and batteries to suit.
- Video/TV setup and (as available) applicable training films. In this context, the Paladin Press video *Deadly Explosives: How and Why They Work* is recommended.
- Illustrations of booby-trap circuit principles, photocopied so each class member has one example of each.
- One copy per class member of the "Threat Phone Call Record" card.
- One "live" timed device (the detonator of which is replaced with a loud, miniature siren/sounder) set to fire

at a predetermined point during the lecture, and at least one fully assembled booby trap in which the firing mechanism is likewise "live" and, when triggered, will cause a similar siren to activate. Suitable sirens/sounders are available from Radio Shack and similar sources and should be of the high-volume type (i.e., at least 100 db).

I have used, in this context, the videocassette booby trap described in *Deathtrap* (available from Paladin Press). The training aid modification consists of simply attaching the high-power sounder/siren to the detonator connection points. Note that this device will be used during the lecture to emphasize the theme of awareness. A member of the class will be asked to pass the videotape, at which point it will "fire."

Lecture

The props should be displayed so as to facilitate viewing by the students. Actual handling will not be allowed until the preliminary talk has been given.

The students enter and sit, and any applicable introduction or preamble is commenced. For example:

"Hello. My name is _____, and the purpose of this lecture is to familiarize you all with the nature of terrorist IEDs; that is, terrorist improvised explosive devices, or bombs and booby traps, if you prefer.

Terrorism is a fact of life. It is not a recent phenomenon by any stretch of the imagination, although enhanced communications and information dissemination techniques might lead us to believe so. Terrorism might be defined as any violent or criminal act undertaken with a view to influencing persons other than the immediate victims.

The terrorists themselves hope to achieve ideological, political, or religious aims via this use of violence and/or the threat of the use of violence. One aspect of this desire to frighten and intimidate is the use of the

bomb or booby trap. In the absence of a more logical reason, you are a potential target simply because, to the terrorist, you are a symbol of your government's foreign policy, your company's attitude toward apartheid, or whatever. The terrorist's apparent predilection for attacks against 'innocent persons' is explained easily by reference to a famous terrorist proverb, a version of which is, 'When hungry, why hunt a tiger when there are plenty of sheep around?'

(pause)

We will not go further here into the nature of terrorism or what makes the terrorist tick. Rather, we will concern ourselves with a very different tick, the tick (albeit a metaphorical one in today's electronic age) of the terrorist bomb.

Terrorist bombs and booby traps can take many forms, but they all have one thing in common: they will kill or cripple you if you happen to be in the wrong place at the wrong time. Later, we will consider some of the many shapes and forms such devices might take, but first we will look at safety and reaction drills.

These consist of what to do and what not to do if you find, or suspect you have found, a terrorist device, as well as what to do to help the security forces if you find yourself in the position of receiving, albeit for relay to some other party, a threat telephone call. By the way, if, at any point throughout the course you have a question, feel free to raise your hand.

Safety

Safety is of paramount importance. I would like to emphasize, then, that suspected terrorist IEDs that are discovered must *not* be moved or touched. It is likely (and should always be assumed) that any such device will incorporate an antihandling circuit (i.e., a firing mechanism), in addition to any timer unit that activates when the bomb is moved. Rather, personnel in the

area should already be evacuated in a calm and professional manner, and other persons should be prevented from entering that area. If, at the time of discovery, you are not the senior person present, take charge. Make a note (if only a mental note) of the time.

Do not waste time trying to find "Mr. Smith," the manager, or whomever. Detail someone to notify the security forces immediately, and someone else to keep the area clear. Have two others confirm that these measures have been taken. Then detail someone to find (if applicable) your immediate superior.

There must be no concern that "one will look silly" if the "bomb" turns out to be a lost shopping bag. The security forces would much rather be tasked to dispose of five pounds of potatoes and a box of cornflakes than *not* be tasked to dispose of an IED that subsequently kills six people and cripples three others.

Once satisfied that the area is clear, leave the area yourself and help keep others from reentering. Await the arrival of the response team and explain calmly, clearly, and precisely where the suspected device is and at what time it was discovered.

If known, pass on any time details pertaining to when the area in question was known *not* to contain the suspect package. We will return to this point later. It is worth mentioning here that evacuating the area and preventing others from entering does not mean emptying a room and standing guard over it by placing yourself in the doorway. It does mean clearing the entire building and establishing some type of cordon.

If you really believe that lives are in danger (and if applicable, of course), simply hit the fire alarm. If you were wrong, your conscience might worry you for a few weeks. You will have wasted maybe an hour or two of many people's lives, cost your company some money, whatever.

If, however, your suspicions were correct and you didn't do anything about it, I guarantee you that your

conscience will bother you for a lot, lot longer. That's assuming, of course, that you and your conscience are still around!

Vigilence, caution, care, and appropriate reactions are weapons that you can use against the terrorist to great effect. Bear in mind, however, that as with any other weapon, practice makes perfect.

Now, a few minutes ago I implied that knowing what time a suspect package, for example, *wasn't* in a given area could be of importance. This is true for at least two reasons. First, it can be of use to security force personnel who have good cause to believe the device has been planted by a currently operational, known terror group that generally employs similar timing techniques. It might even be (and it certainly wouldn't be the first time) that the group intends to issue a warning (for example, the management of the target store has thirty minutes to evacuate personnel and shoppers before the device explodes).

As any such warning will be issued as soon as the planter of the device has informed his/her superiors that the bomb is in place (or, possibly but unusually, after the planter him/herself has walked or driven to a telephone out of the target area), the elapsed time between the first sighting of the package and any warning can help security personnel decide on the most appropriate course of action. It is even possible that a terrorist device will be spotted before the warning has been issued (i.e., almost as soon as it is planted).

Having regular, effective security checks in operation at your place of work is one way of limiting the unobserved time of any terrorist device that might be smuggled through physical and electronic search points.

Take, for example, a government office in which the back wall of the men's rest room backs onto the waiting area for the office of the senior government official employed there. If the rest room is checked every thirty

minutes, it follows that the maximum period of time a device could remain unobserved is thirty minutes plus the actual search time.

Rest assured that any terrorist operative worth his salt will know, from reconnaissance undertaken by others, what the intersearch time interval (if any) is, and he will therefore be able to coordinate the planting of a device with the departure of search personnel and the making of any warning phone call with his safe exit from the target.

Dry runs might also be taken in which the terrorist plants an empty box, for example, to see if it attracts attention. Thus, empty boxes *should* attract attention.

This is the downside of routine search exercises, and it is worth noting here that all such searches and checks must be made on a regular but *random* basis, thus denying the terrorist observer the ability to predict accurately not only when it might be safe for him to plant a device, but also for how long it would remain undiscovered. Knowing—and I mean *knowing*, not guessing—that a given area is clear also makes it far easier for reaction team personnel to search for a hidden device a threat caller claims to have planted.

In an extreme (and, unfortunately, unrealistic) example, if your security checks were so good and searches so thorough that you *knew* no device could have been planted in a given building, it would be possible to dismiss any threat call as a hoax without the need to initiate evacuation and search procedures. Less than 100-percent-effective security being the norm, all such calls must be treated as genuine.

This is not meant to be a criticism. You will, I'm sure, have heard many experts claim that there is no such thing as 100-percent security. I disagree only inasmuch that, in my opinion, you can have total security part of the time, or partial security all of the time. Of course, the "part-time" total security may, in certain circum-

stances, last for an extremely long period—years, even. But, given the incalculable number of possible permutations relating to the movement of persons, their loyalties, motivations, desires, states of mind, external influences, and so on, it cannot last forever.

Beware, though, of experts using the "no such thing as total security" clause to excuse inexcusable oversights or errors of judgment. It is easier to see solutions with hindsight, of course. But remember that it is the job of the security professional to anticipate danger areas and see the solutions before the event. It is important also that the nonprofessionals who see potential problems (if not the solutions) make themselves heard and insist on some sort of action being taken.

We can see, then, that good, regular, but unpredictable searching of likely bomb emplacement areas is vital.

Now, it will often be found at the start of any such checks that there are numerous likely hiding places. Many of these potential hiding places are there by accident, so to speak. In other words, they are the nooks, crannies, and caves of an industrial construct that serve no purpose other than to collect dust.

Other areas might be looked upon as cupboards or doorways to which there is no normal need to fit locks. Few people would ever steal the innards from the toilet cistern, for example, so the top access lid, by tradition, rests upon the body of the unit rather than being secured to it.

By comparison, people do steal the towel rolls from washroom towel dispensers, thus we find that these often sport a lock of some sort.

Other things being equal, then, it would be fair to say that a searcher might be more likely to find a device hidden in one of the easily accessible nooks or crannies, rather than inside the towel roll dispenser, and simply on the grounds of expediency, the nooks and crannies should be searched before other likely but harder-to-access areas.

When considering potential hiding places, put yourself in the place of the terrorist or, if that is stretching your imagination too far, a person who needs to conceal some small but valuable object. Where would you hide it?

An obvious safety precaution, then, is to seal up any existing easy-access hiding places. This should be implemented where the perceived risk warrants it, but where this is done it must be done effectively so that subsequent removal requires the use of tools and/or leaves obvious and readily noticeable signs. Loose resting boards or sheets of wood or metal that can simply be lifted out are worse than useless, as they do not prevent the terrorist from emplacing devices behind them but do serve to delay search times.

It can be useful to compare antiterrorism measures in this context to anticrime measures. If, at your office, factory, or home you initiate and practice good, basic antitheft techniques, you will also be applying good antiterrorist measures. A suspicious vehicle seen loitering near your home, office, or government facility might contain thieves reconnoitering the property with a view to breaking in; it may contain terrorists noting the movements of the occupants with a view to kidnapping or killing.

A shadowy figure chased away from the factory grounds at midnight might be a burglar forced to flee empty-handed; he might be a terrorist who has planted a device already.

Military and security personnel will employ a technique known as countersurveillance. Civilians may employ the same technique easily without any formal training and call it vigilance. Being alert to any and all suspicious activity and reporting it to the appropriate authority, combined with good access security, are the cornerstones of effective counterterrorism.

To conclude this section, then, we can summarize by saying that in the absence of existing and established

security measures the following sequence of events should be initiated.

1) Assess the threat level and vulnerability of the potential target area and implement appropriate access control measures.

Assess the threat with reference to any ongoing terrorist campaigns, previous terrorist targets, specific or general threats received, the nature of the establishment, the likely loss of life or injury if a device were to be successfully planted in various areas, and so on.

2) Decide on a reaction program to cope with bomb threats or the discovery of a suspected device and ensure that the relevant personnel are familiar with and practiced in said reaction techniques.

3) Test, reevaluate, modify, and adapt access control and reaction techniques on a regular basis. Insist that ID cards are shown even by personnel well-known to you. Remember that by asking known senior staff members or close friends (for example) for their ID cards, you are not attempting to confirm their identities, but are rather checking that they have not lost or mislaid their cards, which might be used subsequently by the terrorist. Similarly, do not feel flattered if you are not asked to produce your ID card; instead explain to the appropriate person the possible consequences of your having lost it without knowing. How would you feel if the lost card were used by a bomber to access a supposedly secure area and plant a device?

(invite questions at this point)

IED Designs

We will now consider some typical IED designs. IEDs may be categorized according to the means of DELIVERY, the method of ACTIVATION, and the USE to which they are put.

DELIVERY refers to the method by which the IED is conveyed to the target. There are four basic delivery

modes. These are: emplaced or laid devices that are positioned by hand; mail or postal devices sent as innocent letters and parcels; vehicular devices, which may be attached to a specific vehicle used by a target or installed in any vehicle that is then driven or transported to the target area by some other means; and projectile devices, which are thrown, dropped, or discharged from a launcher of some type.

ACTIVATION refers to the method by which the device is fired or activated. It is in this area that the ingenuity of the terrorist comes into its own and the numerous activation methods are limited really only by the imagination of the designer or perpetrator. Having said that, three broad categories can be used to describe the general activation method. These are ACTION by the target, TIME-DELAY, and COMMAND detonation, the latter being a device that is fired by the bomber or a proxy at a specific moment. As you examine the example IEDs, these activation methods will become clearer but, aside from the subtle or not-so-subtle variations on the theme, the categories are essentially self-explanatory.

ACTION implies movement—either of the device itself or by the target in close proximity to the device, which then reacts to vibration, heat, metallic content, noise, pressure, a release of pressure, and so on.

TIME-DELAY involves the use of a mechanical, electromechanical, electronic, or chemical delay system that may be initiated by the bomber with a view to enabling him to safely depart the area before the subsequent explosion or fire. It might also be initiated by the target so as to kill, for example, the third member of a patrol of five (the device having been triggered by the first member of the patrol) or to destroy the second vehicle in a convoy, the device having been triggered by the first vehicle to pass over it.

In the category of USAGE, we find two basic applications: STRATEGIC and TACTICAL. Strategic devices are

used indiscriminately, usually in the hope of causing massive casualties and thereby generating international publicity.

Tactical devices are used primarily against a specific target, usually a specific individual.

(invite questions at this point)

The device will be activated, as we have said, by some action on the part of the target, the expiration of a set period of time, or direct initiation by the bomber or someone acting upon his command. We will now examine some actual examples of terrorist IEDs and consider their method of activation in greater detail.

Needless to say, really, these examples are all inert and perfectly safe to handle. Having examined some devices and answered any questions, we will watch a film."

Use of Props and Visual Aids

Select example IEDs, with the exception of the video booby trap, and pass them around one at a time to the course members, explaining what sort of activation method has been employed and demonstrating this where required. Upon completion of this stage of the program, invite questions and then prepare to show the film(s). Produce the video booby trap and offer it to a chosen course member, inviting him/her as you do so to place it in the VCR and run it. As the cassette is withdrawn from its case, the device will "fire," generating shock and reaction to varying degrees, depending on the occupational status of the course personnel. Having allowed a few seconds for the initial reaction to die down, explain that, far from being a joke, the exercise was designed to reinforce the need for caution.

In some cases, the individual to whom the cassette is offered will say, in a lighthearted manner, something like, "This won't explode, will it?" If this occurs, invite the person to open it anyway and see what happens. Congratulate this individual on his or her caution and

explain that, although the comment was meant humorously, it indicates the required mind-set.

Ask how many persons thought of searching the area before settling down for the course, and ask how many thought that security was someone else's responsibility. Invite persons to search now and offer the suggestion that there are few better strategical targets open to the terrorist than a counterterrorist course!

If the hidden time-delay device is found before it "fires" and is not touched or moved, congratulate the finder and (assuming the suggestion has not already been made) ask what the next course of action should be. The required answer is evacuation/notification of security forces or police.

If the hidden time-delay device "fires" prior to this stage of the course, explain again its purpose and solicit next-course-of-action reactions. Again, the required answer is immediate, controlled evacuation.

At this point, show any available film(s). Conclude with an invitation to ask questions.

APPENDIX II: THREAT PHONE CALL CARD

(Keep by telephone)

In high-risk areas, install some type of phone recording system. If a threat call is received, copy the recorded message down onto the form below anyway, as this can speed up subsequent reaction-force assessment.

This phone number: _____

Precise wording of threat: _____

_____

_____

_____

_____

_____

_____

_____

_____

WHEN is the device due to explode?

_____

WHAT does it look like?

_____

WHERE is it?

_____

WHAT will cause it to go off?

_____

WHY has it been planted?

_____

WHAT is the name of your organization?

_____

WHAT code word can you give to prove this is not a hoax?

_____

DID you place the device?

_____

Time _____ Date _____

SEX of caller _____

NATURE OF VOICE:

Age: young/old

Language: obscene/incoherent/calm/panicky/tape recorded/other _____

Accent: local/foreign/obviously disguised

Apparent country of origin: _____

Familiar (sounded like) _____

VOICE CHARACTERISTICS:

muffled/angry/excited/slurred/drunken/nasal/laughing/crying/slow/fast/other _____

BACKGROUND NOISES:

traffic/machinery/voices/music/typewriters/public address system/vehicle (engine) noises/very clear line/very bad line/aircraft/other _____

OTHER NOTEWORTHY POINTS:

_____

_____

_____

_____

REPORT THIS CALL TO:

_____

_____

Time reported: _____

Date reported: _____

APPENDIX III: VEHICLE SEARCH AREAS

Personal security checks are to be undertaken on an individual basis upon returning to a vehicle parked in a nonsecured or unobserved location for any length of time. High-risk personnel should invest in telescopic extension mirrors and flashlight assemblies, which can be used to examine the underside of the vehicle without crawling under it. A high-quality alarm should be installed as a matter of course, and where this is not practicable a portable vehicle alarm should be used as a temporary measure. Never assume, however, that because the alarm was not triggered the vehicle was not have been tampered with.

1) Look for obvious signs of tampering; smudge marks in dirt, dust, or grease; and scratches around door, hood, and trunk areas.

As an expedient indicator in high-risk areas, especially appropriate at night, sprinkle talcum powder or flour under and around the vehicle upon leaving it. Any persons subsequently approaching the vehicle close enough to interfere with it will leave telltale marks.

2) Look for suspicious items such as pieces of wire, wire insulation, packages, and other unusual objects under, around, and *inside* the vehicle before opening

doors. This includes looking for items attached to the underside of the vehicle, resting atop muffler boxes, tires, drivetrain components, and up inside wheel arches. Check also the bumper and fuel-tank areas.

3) Before opening doors, check that the rearview mirror has not been moved nor the seat positions adjusted.

4) An expedient precaution against magnetically attached vehicle bombs is to install a flux gate compass, available from Radio Shack. These are not normal vehicle compasses, but rather powered electronic units with a separate sensor.

Ignoring the accompanying instr[illegible]ions with regard to setting up the compass for normal use, place the sensor head against the metal floor of the vehicle and the display unit in any convenient location where it can be seen from outside the vehicle. When departing the vehicle, note the position of the display direction indicator. If, subsequently, a device is attached by means of a magnet, the display will move. This movement would be apparent upon your return to the vehicle. *Do not* use this as a substitute for physically checking!

5) An alternative "antivehicle" bomb technique is to coat the underside of the vehicle with a heavily stippled layer of underseal. The idea is to create an extremely uneven surface of insulating material that will render the attachment of a device by magnets impracticable. Once again, this sort of technique is a supportive measure; do not use it as a replacment for thorough physical testing.

If you do consider yourself a likely terrorist target (by virtue of your job, your relationship to military/government personnel, or other logical factors), and you do suspect the vehicle has been tampered with, contact the police/security forces and do not enter the vehicle or open the trunk.

Corporate security personnel tasked with ensuring that terrorist devices are not smuggled into facilities via vehicles will, for the sake of speed and efficiency, usually

be divided into teams of two, each team member having responsibility for half of the vehicle, as if an imaginary line were drawn lengthwise through it.

6) In addition to inspecting the underside, check the trunk and front/rear bumper areas, along with the radiator grille area and the engine compartment, including the firewall area, the air filter housing, exhaust manifold area, engine mounting areas, and other points that might conceivably conceal a device.

7) An internal search will include the area under the dashboard, glove box, front/rear seat areas, headrest areas, and any other likely concealment points. With only a little practice, two men can search a vehicle thoroughly in less than five minutes. Again, remember that the level of security should always be contextually appropriate and commensurate with the threat level. As a rule of thumb, too much security is preferable to too little.